

To locate events in the air/ground transcript, refer to the event timeline in the postmission report (on shelves) for GET (Ground Elapsed Time) of event. Transcript has GET/GMT at top of each page.

TABLE 2-I.- SEQUENCE OF EVENTS

Event	Time, hr:min:sec	
	Planned <sup>a</sup>	Actual
Launch Phase		
Range zero (15:02:45 G.m.t.)		
Lift-off (15:02:45.36 G.m.t.)	00:00:00.2	00:00:00.4
Maximum dynamic pressure	00:01:15.6	00:01:18.5
S-IB inboard engine cutoff	00:02:20.3	00:02:20.7
S-IB outboard engine cutoff	00:02:23.3	00:02:24.3
S-IB/S-IVB separation	00:02:24.6	00:02:25.6
S-IVB engine ignition	00:02:26.0	00:02:27.0
Escape tower jettison	00:02:43.3	00:02:46.5
S-IVB engine cutoff	00:10:14.8	00:10:16.8
Orbital Phase		
Orbital insertion	00:10:24.8	00:10:26.8
S-IVB safing start	01:34:27.0	01:34:29.0
S-IVB safing terminate	01:46:28.0	01:46:30.0
S-IVB takeover	02:29:55	02:30:49.1
Spacecraft/S-IVB separation	02:54:55.2	02:55:02
First phasing maneuver start	03:20:00	03:20:09.9
First phasing maneuver cutoff	03:20:16.3	03:20:26.7
Second phasing maneuver start	15:52:00	15:52:00.9
Second phasing maneuver cutoff	15:52:18.5	15:52:18.5
First service propulsion ignition	26:24:55.2	26:24:55.7
First service propulsion cutoff	26:25:04.7	26:25:05.7
Second service propulsion ignition	28:00:56.0	28:00:56.5
Second service propulsion cutoff	28:01:03.8	28:01:04.3
Terminal phase initiate start	29:18:34.0	29:16:33

<sup>a</sup>Planned times for the launch phase are those calculated prior to the mission; planned times after orbital insertion are the last updated time prior to the event.

## APOLLO 7

TABLE 2-I.- SEQUENCE OF EVENTS - Concluded

Event	Time, hr:min:sec	
	Planned <sup>a</sup>	Actual
Orbital Phase - Concluded		
Begin braking	29:43:34	29:43:55
End braking, begin station-keeping	29:53:34	29:55:43
Separation maneuver start	30:20:00	30:20:00
Separation maneuver cutoff	30:20:05.4	30:20:05.4
Third service propulsion ignition	75:47:58.6	75:48:00.3
Third service propulsion cutoff	75:48:07.8	75:48:09.3
Fourth service propulsion ignition	120:43:00	120:43:00.5
Fourth service propulsion cutoff	120:43:00.4	120:43:00.9
Fifth service propulsion ignition	165:00:00	165:00:00.5
Fifth service propulsion cutoff	165:01:05.9	165:01:07.6
Sixth service propulsion ignition	210:08:00	210:08:00.5
Sixth service propulsion cutoff	210:08:00.4	210:08:01.0
Seventh service propulsion ignition	239:06:11	239:06:12.0
Seventh service propulsion cutoff	239:06:18.8	239:06:19.7
Eighth service propulsion ignition	259:39:15.9	259:39:16.3
Eighth service propulsion cutoff	259:39:27.9	259:39:28.2
Entry Phase		
Command module/service module separation	259:43:33.8	259:43:33.8
Entry interface (400 000 feet)	259:53:26	259:53:27
Enter blackout	259:56:17	259:54:58
Leave blackout	259:59:14	259:59:46
Drogue deployment	260:03:17	260:03:23
Main parachute deployment	260:04:14	260:04:13
Landing	260:08:58	260:09:03

<sup>a</sup>Planned times for the launch phase are those calculated prior to the mission; planned times after orbital insertion are the last updated time prior to the event.

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**APOLLO NEWS CENTER  
HOUSTON, TEXAS**

**APOLLO 7 MISSION COMMENTARY  
October 11, 1968**

KING                      This is Apollo/Saturn launch control at T-2 hours and counting, T-2 hours countdown proceeding satisfactorily. The Apollo 7 prime crew aboard the spacecraft, going through some checks, primarily of their suit loop, the environmental control system that they have been tied into now aboard the Apollo 7. The spacecraft hatch remains open. It is due to be closed according to countdown about 10 minutes from this time. A short while after the hatch is closed and the cabin itself pressurized with a combination of 60 percent oxygen and 40 percent nitrogen, used for on the ground, we will go through some leak checks and then the commander will proceed into the support advisory system check. In the meantime, we are in the block house, although the elements of the mission are going as well as the crew is doing aboard the spacecraft at this time. We spent some 2 and 1/2 hours bringing the propellants aboard the Saturn IB launch vehicle earlier this morning, starting at 5 am when we resumed our countdown at T-6 hours. We brought the liquid oxygen aboard both stages and then the liquid hydrogen, some 67,000 gallons of liquid hydrogen will go out of the second stage a little later in the count. Following the propellant loading, the closeout crew attend that into the spacecraft area and command module pilot, backup command module pilot John Young, still aboard the spacecraft to perform some final checks. The prime crew arrived on time and are now aboard. All our checks of the mission still going well and no further reports on our wind conditions, they remain the same as forecast earlier and we will continue to take a hard look at the wind situation, the one questionable factor in the countdown at this time. T - 1 hour 58 minutes and counting, this is launch control.

END OF TAPE

KING This is Apollo Saturn Launch Control T minus 1 hours 49 minutes 58 seconds and counting. We are continuing at this time. the three pilots are in the Apollo 7 spacecraft now checking out some major systems of the spacecraft with the spacecraft test conductor. Now that they are aboard and restrained into their seats we have brought some final checks of the suit loop into play. We have been checking the flow of the oxygen to the space suits on the three pilots and they appear to be satisfactory at this time. In addition to this, the command module pilot Donn Eisele made some preliminary checks with the spacecraft test conductor and his team are concerned with the guidance and navigation system, and just a matter of seconds ago the commander, Wally Schirra, began a series of checks of the abort advisory system. These are the cues that he receives in the spacecraft, a series of lights on panels indicating malfunctions. He will make a judgement based on these readouts plus cues he receives from the ground to make a decision on whether an abort would be required, and he would take the action if necessary. AT this time, the launch operation manager, Paul Donnelly, here in the block house, is sending a series of cues to the spacecraft in a test of the system. The commander, Walter Schirra, is responding to these abort cues by confirming lights going ON and OFF in the console to his left front. Our checkout continuing, in the meantime with the launch vehicle, the propellants are still relatively stable. We are running a few computer program runs with the instrument unit above the two stages of the launch vehicle. These computer tests, using the automation system we have at the pad, continue throughout most of the countdown. All proceeding satisfactorily at this time, weather conditions are still the same with the forecast of surface winds 11 to 16 knots in the launch area at launch time, which is planned for 11:00 a.m. Eastern Daylight Time. The winds appear to be marginal. We'll be keeping a close eye on them as we continue down in the count. The launch director is receiving reports on wind profiles from Houston Flight at the Manned Spacecraft Center, the Control Center in Houston. So we'll be keeping a close eye on this. Other aspects of weather appear to be great. The checkout continuing at T minus 1 hours 47 minutes 25 seconds and counting. This is Launch Control.

END OF TAPE

This is Apollo Saturn launch control at T minus 1 hour, 44 minutes in counting. Just about a minute ago the hatch was closed on the Apollo 7 spacecraft. We have it logged at 15 minutes and 30 seconds after the hour; the hatch was closed and secured on the Apollo 7 spacecraft. The support crew is still in the White Room at the 220 foot level. They'll be standing by as we pressurize the spacecraft to keep an eye on the progress of pressurization using that 60-40 atmosphere, that is 60 percent oxygen and 40 percent nitrogen in the spacecraft cabin on the ground. The astronauts of course in their suit loop are checking oxygen directly into their pressurized suits. The countdown is continuing to go satisfactorily at T minus 1 hour, 43 minutes, 8 seconds and counting.

END OF TAPE



This is Apollo Saturn Launch Control at 30 minutes past the hour and T minus 1 hour, 30 minutes and counting. The crew aboard the Apollo 7 spacecraft is still making the various checkouts of their consoles as we purge the cabin with an atmosphere of 60 percent oxygen and 40 percent nitrogen. Once the cabin is purged and pressurized, - the standby crew, the support crew, will be ready to depart the area. However, we expect they will be in there for at least another hour standing by as required. The standby crew must depart from the area by the T minus 40 minute mark in the count when we're in our terminal countdown. They will stand by in the White Room for quite awhile yet to rechecks of the spacecraft and to assure that everything is GO as far as Apollo 7 is concerned from the 220 foot level. Here in the blockhouse the crew continuing to monitor the status of the various propellants aboard the Saturn 1B launch vehicle, liquid oxygen and the RP1 fuel in the first stage and the liquid oxygen and hydrogen fuel in the second stage of the 1B. We get continuing status reports here from the propellant monitors and all indications are that the propellants are in a very stable condition and are GO at this time. Of course throughout the whole remainder of the countdown we will be replenishing the supply of the liquid oxygen and liquid hydrogen since they are cryogenic propellants, and must be maintained at an extremely low temperature as a result the supply does boil off and we need to replenish it to assure that we have a hundred percent load on when we're ready to fly and those engines ignite at the 3 second mark in the countdown. The next major milestone coming up in about 10 minutes will be some checks of the emergency detection system. These are checks between the crew here in the blockhouse, the spacecraft crew in the manned spacecraft operation building back at the Kennedy Space Center, and the Apollo 7 spacecraft. The spacecraft commander Walter Schirra will be conducting most of the operations as far as EDS or the Emergency Detection System, is concerned from the spacecraft end of the test. We're now at T minus 1 hour, 27 minutes, 33 seconds and counting. This is Launch Control.

END OF TAPE

KING                      This is Apollo Saturn Launch Control at T minus 1 hour 20 minutes and counting, and we are proceeding still aiming toward our planned liftoff time of 11:00 a.m. Eastern Daylight Time here at the Cape. Launch vehicle here at Pad 34 still going very well at the time as the crew continues to monitor its over all status using two large computers, one here in the block house and one beneath the launch vehicle on the pad to keep checks on the thousands of parameters and feedbacks that we get from the vehicle over these last several hours of the count. At the 220 foot level atop the pad, the prime crew for the mission, Astronauts Walter Schirra, Donn Eisele and Walter Cunningham, aboard their Apollo 7 spacecraft with the hatch closed, and we have just completed a purge of the cabin. That is, bringing in the 60 percent oxygen and 40 percent nitrogen atmosphere into the cabin. In the meantime, however, the crew members themselves are on the suit circuits, that is, taking in 100 percent oxygen through their space suits. We've completed the purge and the crew will now make a sample of the atmosphere inside the cabin and report back on the aspects of the sampling. The count down continuing, weather conditions still the same, still keeping a close eye on the surface winds in the area, which are forecast to be some 11 to 16 knots from the East Northeast at launch time. Now at T minus 1 hour 18 minutes 27 seconds and counting, this is Launch Control.

END OF TAPE

This is Apollo Saturn Launch Control, T minus 1 hour, 9 minutes and counting and we are proceeding with the Apollo 7 mission count. At this time in the count Astronaut Wally Schirra is still working on several tests with the ground control people both here in the blockhouse and at the control center back at the main spacecraft operations building at KSC. The commander gave us another report a short time ago as he looked out, he reported, "From what I can see, it's blue as a bluebird out there." The checkout is continuing; we have completed the cabin purge of the Apollo 7 spacecraft and Schirra also completed about 5 minutes ago a series of rather extensive final checks of the Emergency Detection System. This is the system that would send cues to the spacecraft atop the launch vehicle in the event of any type of malfunction. We ran through a series of tests lasting some 15 to 20 minutes with the commander in the spacecraft participating with the crew here in the blockhouse and at the spacecraft control center. We are now in the process of calibrating the cue ball which is a small device atop the launch escape tower, right at the top of the bird itself. The cue ball is an angle of attack meter that reads pressures and can give inputs as far as the attitude of the entire space vehicle is concerned during the early portions of flight. This calibration is going on at this time, we're also getting some readouts and checks of the tracking beacons in the instrument unit of the Saturn 1B launch vehicle. The large-band radar here at the cape has been sending signals to these beacons in the instrument unit and verifying that they are operating satisfactorily. We are still GO at this time, still keeping an eye on the surface wind conditions, but the countdown is continuing. T minus 1 hour, 6 minutes, 37 seconds and counting; this is Launch Control.

END OF TAPE

KING                      This is Apollo/Saturn launch control, T-60 minutes and counting, T-60 and we are still proceeding with the Apollo 7 count at this time. The spacecraft test conductor, Skip Chilton, still making checks with spacecraft commander Walter Schirra in the Apollo 7 spacecraft at a 220 foot level here at launch complex 34. Our countdown still progressing satisfactorily. We will be starting the terminal count in about 9 and 1/2 minutes from this time. A short while ago Houston Flight made final status check to see if all elements were ready to pick up the terminal count and all reported go. We will make our checks here shortly at the Cape, both spacecraft and launch vehicle-wise to assure all is in readiness for the terminal countdown, which we will start at 50. We are now starting to break up the White Room at the 220-foot level. We have actually pulled some of the openings, although the White Room is still attached to the hatch, some of the openings are now being pulled away in preparation for removing the Apollo access arm which will come about 20 minutes from this time. Checkout is going quite well. Wally Schirra just informed the spacecraft test conductor that we are a little bit ahead on the count in the spacecraft checkout at this time. All aspects still looking good, the one question still remains, surface winds in the Cape Kennedy area. They are close to our marginal limits and we will be keeping a close eye on them as we go further down. Once again, the reported weather conditions, the forecast was for surface winds 11 to 16 knots from the east northeast in the Cape Kennedy area. We are now T-58 minutes 19 seconds in counting, this is launch control.

END OF TAPE

KING                    This is Apollo Saturn Launch Control at T-50 minutes and counting. Fifty minutes and counting, we have started our terminal countdown here at the 50 minute mark and the countdown is a GO for the Apollo 7 mission. At this point in the count, the Capsule Communicator here in the Blockhouse, Astronaut Stu Roosa going through some communications, checks with the crew aboard Apollo 7 located some 220 feet above the pad here at complex 34. In the meantime checks with the launch vehicle still continuing to go satisfactorily. As we come into our terminal countdown, we will have some major events coming up in some 10 or 15 minutes or so. As the support crew clears away from the White Room, we will be ready to pull back that Apollo Access Arm to a standby position some 3 feet away from the Spacecraft. Countdown still proceeding satisfactorily at 49 minutes, 4 seconds and counting. This is Launch Control.

END OF TAPE

KING This is Apollo Saturn Launch Control at T minus 45 minutes and counting, T minus 45, the count down proceeding satisfactorily. We've been in our final count down for Apollo 7 now for some 19 hours since it picked up yesterday afternoon, and all aspects of the mission are still GO. We're still keeping a close look on weather conditions, particularly the surface winds in the Cape Kennedy area. Following is a recount of the activities since we picked up the count down early this morning. We came out of a built in HOLD at 5:00 a.m. Eastern Daylight Time with the count down at T minus 6 hours. We then proceeded to load the cryogenic propellants, the liquid oxygen and liquid nitrogen, aboard the two stages of the Saturn IB launch vehicle. In total, we loaded close to 100 thousand gallons of liquid oxygen in total between the two stages, and then proceeded to load some 64 thousand gallons of hydrogen aboard the second stage. Following that operation, we were able to bring our close out crew back in to prepare for the astronaut's arrival. The prime crew, Astronauts Wally Schirra, Donn Eisele, and Walter Cunningham, were awakened per the astronaut count down at 6:00 a.m. Eastern Daylight Time this morning. They were awakened at their quarters at the Manned Spacecraft Operations Building at the Kennedy Space Center, some 7 miles from the launch pad. They then went down the hall to a medical examining room where they took a brief physical examination, given by Doctors Jerry Joyner and John Teegan. Following the physical, Dr. Joyner said the astronaut's physical exams were within normal limits, and that they are ready to go. The crew then sat down for breakfast. The menu was steak and eggs, orange juice, toast and coffee. They had a number of guests at breakfast this morning, and these guests included Mr. James Webb, the former administrator of the National Aeronautics and Space Administration, Mr. John Healy from North American Rockwell, Mr. Fred Peters, who has been NASA representative at North American on the west coast, Mr. Ken Kleinknecht, who is deputy at the Manned Spacecraft Center in Houston, deputy for command service module operations under the Apollo Program Office. Two of the support crew astronauts who have been working so close with the Apollo 7 crew for these many months also were at breakfast with the prime crew. These were Astronauts Ron Evans and Bill Pogue. Deke Slayton, Director of Flight Crew Operations, also joining the crew for breakfast. Following breakfast the crew put on their space suits and were called to the pad at the key time in the count down. Just as the count down called for Astronaut Walter Schirra came aboard the Apollo Spacecraft at the 2 hour and 25 minute mark in the count. At 10 minute intervals thereafter he was

KING followed in by first the Lunar Module Pilot Cunningham, and finally by Donn Eisele, the man who has the middle seat in the spacecraft who came aboard 10 minutes later. The hatch on the spacecraft was closed at 9:15 a.m. this morning and the count has been continuing satisfactorily since that time. The latest weather report we have for the Cape Kennedy area at this time calls for scattered clouds at launch time, winds from the east 15 to 18 knots with gusts to 22 knots. The temperature in the launch area expected at 82 degrees. For a status report we now switch you to the Mission Control Center in Houston.

HANEY This is Apollo Control in Houston. It's a typically beautiful Texas day out here, blue skies and almost no wind. I know you people in Florida will appreciate that. Around the world it's pretty much the same. There is some weather out in the Pacific, a typhoon out near Japan, which we won't see for a few revs, and a new tropical storm kicking up off Baja, California. Our world range of stations is in excellent condition, only the most minor problems being reported from the 17 high speed data stations around the world. The Launch Control - Flight Control team that will manage the early revolutions of the flight has been on duty here in Houston now about 2 hours, and all in all we look pretty good. Wally Schirra, while Jack King was talking, I heard him observe as we evacuated the flight room, he is still Wally Schirra. He noted the departure of Gunter Wendt, the pad room - the white room pad leader, by reporting to the crew that Gunter went. And he also suggested that Gunter have a good trip down on the elevator. All in all at 39 minutes before launch we look good here in Houston.

END OF TAPE

This is Apollo Launch Control at T minus 39 minutes and counting. T minus 39 and we are proceeding. Coming up in a few minutes will be another milestone in the countdown as we retrack the Apollo access arm from the spacecraft. Up to this time the access arm has been attached even though the spacecraft hatch has been closed. The countdown in the blockhouse calls for the access arm to be pulled back at the 33 minute mark in the count. However, when this does occur, we will pull the access arm some 3 feet away from the spacecraft, 12 degrees to be exact, and this will be a standby position in the event it was necessary to bring it back to the spacecraft rapidly. The access arm will not be fully retracted to its fall back position on the umbilical tower until the 5 minute mark in the count. Countdown still proceeding and weather conditions still the same, and we are still keeping a close eye on the surface winds as we come up on 38 minutes and counting. This is Launch Control.

END OF TAPE

KING                    This is Apollo/Saturn launch control at T-33 minutes 30 seconds and counting. However, we appear to have encountered difficulty, perhaps the first difficulty in our countdown today. It is concerned with the elevator at the launch pad. This is the high speed elevator that travels from the base of the pad to the 220 foot level and of course, carries the crew and other support people up and down from the spacecraft location. The elevator appears to have malfunctioned at this time. We plan to hold 3 minutes from now, the 30 minute mark in the count and send several technicians in to take a look. In the meantime, the access arm remains attached to the Apollo and of course, directed toward the hatch. In the event of an emergency condition, we have the slide wire available right there on the umbilical tower for escape if necessary. We are going to hold at the 30 minute mark in the count and take a look at the elevator. We are now at T-32 minutes 26 seconds in counting, this is launch control.

END OF TAPE

This is Launch Control, T minus 30 minutes however we are counting. T minus 30 minutes and counting. We have discussed the problem; it appears the difficulty with the elevator now is okay and the countdown is continuing. In the meantime we have completed Apollo transfer with the Saturn 1B launch vehicle, that is going from an external power source to the flight batteries aboard the vehicle and then returning to the external power. We will not go to internal power finally until the 28 second mark in the count. The elevator appears to be okay at this time and the countdown is continuing. We are standing by at T minus 29 minutes, 20 seconds and counting. This is Launch Control.

END OF TAPE

KING                    This is Apollo/Saturn launch control, T-28 minutes 14 seconds and counting and we are proceeding. Just a matter of seconds ago, the Apollo access arm, which had been connected to the spacecraft at the 220 foot level was retracted to a standby position. This is a location some 3 feet away from the spacecraft. Later on in the count, actually at T-5 minute mark, the access arm will be fully retracted. The removal of the access arm at this time, the launch escape tower, about 155,000 pound thrust, launch escape tower atop the command module now has been armed. It is now activated and can be used if required. Our status with the elevator is as follows: we understand that the elevator is at the bottom level of the pad. Discussions during the period indicated that this would not be a hazardous condition, since we have the escape system operating on the spacecraft itself and in the event of bringing the access arm back for any difficulty we would have the slide wire and all probability, a capability of bringing the elevator up to the 220 foot level. So we are proceeding and that is our status as we come up on 27 minutes and counting. Mark T-27 minutes and counting. This is launch control.

END OF TAPE

This is Apollo Saturn Launch Control at T minus 25 minutes and counting. T minus 25. We are standing by for another milestone event here at the pad at this time. Coming up shortly will be a check of the reaction control system thrusters on the Apollo 7 spacecraft. The spacecraft commander Wally Schirra in a few minutes will in fact static fire some of these modules in order to assure that they will be operating properly. The crew aboard the spacecraft now pressurizing the reaction control system in readiness before the test of the thrusters that will be coming up shortly. All, still all aspects going well with the launch vehicle; we completed a key power transfer test and the count is still going well on the launch vehicle side. Now at T minus 24 minutes, 12 seconds and counting, this is Launch Control.

END OF TAPE

KING                    This is Apollo Saturn Launch Control at T-21 minutes and counting. T-21, at this time the commander of the Apollo 7 Spacecraft, Wally Schirra, has gone through a series of checks with the reaction control system on the Apollo 7 Spacecraft. We have a total of some 16 reaction control system engines on the service module of the Apollo 7. They're located in four quadrants around the service module and each of the engines is capable of generating some 100 lbs. of thrust. Astronaut Schirra fired these thrusters and the report from the Spacecraft Test Conductor is the static firing went very well. We actually did fire several of the thrusters during this test and the report was that the test went well. In the meantime we completed some final checks of the range safety destruct system aboard the Saturn 1B launch vehicle. These are checks between the launch crew and the Air Force Eastern Test Range. Those checks also went very well, and the count is continuing. We have just passed the 20 minute mark. We are now at T-19 minutes, 54 seconds and counting. This is Launch Control.

END OF TAPE

This is Apollo Saturn Launch Control at T minus 16 minutes and counting. T minus 16. We are GO for launch at this time. Our latest check on weather conditions and particularly surface winds in the area indicate the winds are GO at this time, at the 16 minute mark in the count; to repeat, the winds are GO for launch. Coming up shortly the Apollo 7 spacecraft will go on full internal power; this will come at the 15 minute mark; this means we will go on the full power of the three fuel cells aboard the Apollo 7. Up to this time the fuel cells have been sharing the load with an external power source. When we go internal we remove the external power source from the spacecraft. This will be coming up shortly; in the meantime we are going through final calibrations of the overall telemetry systems, concerned with the Saturn 1B launch vehicle. We are now coming up in a matter of seconds on the 15 minute mark in the count; mark T minus 15 minutes and counting. T minus 15. This is Launch Control.

END OF TAPE

KING                    This is Apollo/Saturn launch control at T-12 minutes and counting. T-12 and we are go for the Apollo 7 mission at this time. At the final 11 minutes or so of the count, we will have a number of major highlights, we will have a status report that will come in about the 5 minute mark and a check of all aspects of the mission to assure that we are still go at that time. The complete launch vehicle will go on a automatic sequence at the 2 minute and 43 second mark in the countdown. From that time down, all aspects of the count will be automatic, run by the computer system manager here in the Block House and also managed spacecraft-wise at the Control Center at the Manned Spacecraft Operations building at Kennedy Space Center. Countdown continuing at this time, we are now T-11 minutes 6 seconds and counting. As this automatic sequencer continues down, we will have a transfer to internal power with the launch vehicle at the 28 second mark and the eight engines in the first stage of the Saturn IB due to ignite at the 3 second mark in the count. The engines will ignite in tandem and will be up within 3/10 of a second. During those remaining 3 seconds we basically will check the thrust of the eight engines to assure we have that 1.6 million pounds of thrust desired for the launch. At that time, when we close the vents on the Saturn IB launch vehicle, we will have a vehicle on the pad weighing some 1.3 millions pounds. Now approaching the 10 minute mark in the count, we are T-10 minutes 18 seconds and counting. This is launch control.

END OF TAPE

KING                      This is Apollo Saturn Launch Control. We're at T-8 minutes, 25 seconds, and counting and we are still GO for the Apollo 7 launch at this time. Spacecraft Test Conductor Skip Chilton going through a final status check with his spacecraft crew here at the Kennedy Space Center. In the Blockhouse, the crew still monitoring the performance of the Saturn 1B vehicle and all is GO for the mission at this time. He's completing up the status report as we complete the 8 minute mark. T-8 minutes and counting, T-8 and we are GO for launch at this time. This is Launch Control.

END OF TAPE

KING This is Apollo Saturn Launch Control at 6 minutes 38 seconds and counting, we are still GO for launch at this time. Astronaut Wally Schirra just got a report that he was GO for 164 laps, he said he was ready to go without a tire change. The count still proceeding at this time. T minus 6 minutes 20 seconds and counting, however, we just heard a report over the circuit we are asking for a HOLD. We are standing by for further reports. We are now at T minus 6 minutes 15 seconds and holding, T minus 6 15 and holding. This is Launch Control 6 minutes 15 seconds and holding, the test supervisor advises he expects this to be a very brief HOLD. The reason is concerned with a chill down of the engine of the second stage of the Saturn IB launch vehicle. From the 20 minute mark down we introduced gaseous helium into the engine chamber of the second stage to condition it for those propellants that will come into the engine chamber during flight. Of course, the liquid oxygen is at minus 297 and the liquid hydrogen at 423 degrees below zero. The request for the HOLD came to give an additional several minutes for the chill down. To repeat, we are holding at 6 minutes 15 seconds expecting to resume the count shortly. This is Launch Control standing by.

This is Launch Control. We are holding at 6 minutes 15 seconds. Launch Vehicle Test Conductor has advised we expect to resume the count about 35 seconds from this time. To repeat, the reason for the HOLD concerned with additional time for the chill down of the second stage engine of the Saturn IB launch vehicle. We are standing by to resume the count.

This is Launch Control. We have just resumed the count down now at T minus 6 minutes and 8 seconds and counting we resume the count at 56 minutes past the hour. Now coming up on the 6 minute mark, mark T minus 6 minutes and counting. T minus 6, we are proceeding. All reports are that we are GO for a launch at this time. At this point in the count down now we will be coming up on the 5 minute mark, we will be ready to retract that Apollo access arm to its full retract position. It has been on a standby position some 3 feet from the command module up to this time. We have now armed the ignition system of the Saturn IB launch vehicle. This means that it can now receive the signals to ignite those engines at the proper time in the count down, which will come at the 3 second mark. We'll be coming up on some final status reports at this time. T minus 5 minutes 15 seconds and counting. The mission director, Bill Snyder, has given a GO for the launch. Coming up on the 5 minute mark, mark 5 minutes and counting, says Supervisor Don Phillips, giving a final call of GO/NO-GO

KING to the various elements of the mission.  
We are standing by as the reports come back in.

KING This is Apollo Launch Control now at T minus 4 minutes 7 seconds and counting. Spacecraft Test Conductor Skip Chilton has told Commander Wally Schirra "You are GO for the launch." Schirra reported that all looks good. We have now armed the destruct system of the two stages of the Saturn IB launch vehicle, and will be coming up about a minute from this time on the automatic sequencer. From that time down we will be completely automatic in the launch vehicle. We are now at 3 minutes 40 seconds and counting, this is Launch Control.

KING This is Apollo Saturn Launch Control coming up on the 3 minute mark on the count, several seconds from this time. Mark 3 minutes and counting, T minus 3, we are continuing. The astronauts in the spacecraft having just completed some final checks on the guidance and navigation system. We are now at 2 minutes 50 seconds, coming up shortly on the automatic sequencer. The astronaut abort advisory system is in effect at this time, the key people here at the launch complex ready to advise. Now at T minus 2 minutes 35 seconds and counting, it appears that the automatic sequencer is in at this time. T minus 2 minutes and 30 seconds. At this point the various tanks in the two stages of the Saturn IB vehicle are starting to pressurize. We pressurize these tanks with helium. They are pressurized, of course, to force the various propellants into the engine chambers for the proper ignition. The S1B first stage fuel tank is pressurized and the second stage liquid oxygen tank pressurizing at this time. Now coming up on the 2 minute mark, T minus 2 minutes and counting, T minus 2. Not as much reports now on the communication circuits as everybody

END OF TAPE

Not as much reports now on the communications circuits as everybody stands by monitoring the various consoles and watching the various parameters to assure everything is okay. T minus 1 minute, 43 seconds and counting. We are still proceeding. Astronauts standing by in the spacecraft as we come up on the 92 mark in our countdown. Mark T minus 90 seconds and counting. T minus 90. We have conditioned the liquid oxygen in the first stage of the Saturn Launch Vehicle, all tanks in the two stages now pressurizing. Most of the work over these final several minutes concern with the launch vehicle directed by the test conductor, Don Carlson. One minute, 10 seconds and counting. We are still GO at this time. Coming up on 1 minute; mark T minus 60 seconds and counting. We are GO for Apollo 7 at this time. T minus 50 seconds; the vehicle now pressurized and the vehicle is GO as is the spacecraft at this time. Coming up on the 40 second mark; T minus 40 seconds and counting. T minus 40. All reports look good from here in the blockhouse at this time. All aspects of the mission GO; T minus 30 seconds and counting. We'll get ignition of those 8 engines in the first stage at the 3 second mark in the countdown. Now at T minus 21 seconds and counting. We have completed our power transfer. The Saturn 1B launch vehicle, which now weighs 1.3 million pounds is ready to go; coming up on the 10 second mark. 10, 9, 8, 7, 6, 5, 4, 3, 2, we have ignition. Commit liftoff; we have liftoff. This is Launch Control; we have cleared the tower.

HANEY Roger; tower clear. 12 seconds out and the roll program has commenced. 24 seconds out and Schirra reports the pitch program has commenced. 40 seconds, the roll program is complete. 55 seconds, the cabin is relieving; Schirra reported a little noise. One minute. One minute 20 seconds into the flight; all systems GO on the ground and in the air. One minute 40 seconds. Flight director asked the flight dynamics officer if he likes it, and he says, "Yes sir; it looks good." Coming up on 2 minutes; mark 2 minutes. We're having a status check; Apollo 7 has been given a GO for staging. Two minutes, 15 seconds. Inboard engines have shut down; outboard engines have shut down; Schirra called both events. He's got ignition and he says we are up to thrust on the second stage. The thrust is okay at 2 minutes 40 seconds into the flight.

SCHIRRA Oh, beautiful. Tower has really jettisoned.

HANEY Wally says all beautiful, that tower has really jettisoned; it went way out. We are near the 50 mile altitude now and about 60 miles downrange. Three minutes 5 seconds into the flight.

FLIGHT Wally, you're looking good.

HANEY Schirra has just tagged up with the COM here in Houston; a very clean voice communication today. Three minutes, 25 seconds into the flight.

FLIGHT (garble) checks now Wally.

SCHIRRA It looks okay now flight. We're looking at it closely.

FLIGHT Trajectory and guidance are GO, Apollo.

HANEY Trajectory and guidance give another GO here.

SCHIRRA (garble) little bumpy here, but -

HANEY Wally says, "A little bumpy on the second stage; a little bumpy, but we can't hear any complaints. Seventy miles altitude; and about a 120 miles downrange.

SCHIRRA Mark; Apollo 7 systems are GO.

FLIGHT Looking real fine here Wally.

SCHIRRA Gimbals are tight.

HANEY Four minutes, 10 seconds into the flight.

SCHIRRA Gimbal checks looks very good.

HANEY Schirra says, "The gimbal check looks very good."

SCHIRRA This 1G stuff is great.

HANEY His observation is the 1G stuff is great.

Apparently the G loads were quite low. We've been monitoring Schirra's heart rate because that's the only physical parameter we have coming through and it, at launch, and through the early stages, ran about 90 and 92 beats. Four minutes, 50 seconds into the flight.

SCHIRRA Good here, flight.

HANEY Flight director's polling all his stations here and is getting enthusiastic GO's at every console. Five minutes into the flight.

EISELE Spacecraft guidance is GO.

FLIGHT Roger; you're looking real good.

HANEY And we've heard from Don Eisele; reported the spacecraft guidance GO. 90 miles altitude now. Nearly 250 miles downrange at 5 minutes and 25 seconds into the flight. The guidance tracks are exactly overlays here in the Control Center. That is the plan versus the actual.

SC Looking good flight.

FLIGHT All systems still looking very good at Houston.

FLIGHT You're looking real fine Apollo 7.

SCHIRRA Roger; she's riding like a dream.

HANEY Wally says she's riding like a dream at 5 minutes, 58 seconds into the flight.

FLIGHT ...on Wally.

SCHIRRA Six minutes and we're really GO.

haney Mark 6 minutes.

SC The window view is sensational.  
 FLIGHT We finally got to look at the BBC.  
 SC Yeah, that was a real -  
 FLIGHT Okay, everything looks good here -  
 HANEY Six minutes, 20 seconds.  
 SC Flight reports everything is right on  
 track.  
 HANEY Mark 6 minutes, 30 seconds; where the  
 trajectory now is beginning to level out at nearly 110 miles  
 altitude and we are coming up nearly 400 miles out over the  
 Atlantic Ocean.  
 FLIGHT You're right on the old button.  
 HANEY Cap Com Jack Swigert here in Houston  
 reassures the crew that, "You're right on the old button."  
 and the communications are so clear it sounds like the crew  
 is working from the simulator. Seven minute, 3 seconds into  
 the flight.  
 CUNNINGHAM - cut out there -  
 HANEY And we just had our first report from  
 Walt Cunningham in the right seat reporting on the antennas.  
 FLIGHT Walt's a little garbled.  
 HANEY His communication was not quite as clean  
 as that from Eisele and Schirra but quite readable. Seven  
 minutes, 30 seconds into the flight.  
 CUNNINGHAM 7 downclear; LV.  
 FLIGHT You're coming in very garbled.  
 EISELE Roger. Okay -  
 FLIGHT You're also garbled Don; I can read out -  
 HANEY Seven minutes, 45 seconds into the flight.  
 SC (garble) fuel -  
 FLIGHT Let's see what you can do with it.  
 HANEY Mark, 8 minutes into the flight.  
 EISELE Give it to them at ... 8 minutes to go.  
 FLIGHT Okay, copy -  
 HANEY And the crew reports the guidance - Don  
 Eisele reports the guidance is GO at 8 minutes. We are 8 min-  
 utes, 15 seconds.  
 SC - bumpy road, very, very (garble)  
 HANEY We are predicting a cut off time at 10  
 minutes plus 16 seconds, plus 16 seconds I believe. Eight  
 minutes, 40 seconds now; the trajectory has flattened out  
 at about 125 nautical miles and we're 800 miles downrange.  
 SC Flight, this is (garble)  
 HANEY The communication in the last minute has  
 gotten somewhat graveley, not nearly as clean as it was in the  
 early part.  
 SCHIRRA Roger; we're GO for orbit at 9 minutes.  
 HANEY And Schirra at 9 minutes reports we're  
 GO for orbit.

HANEY Control Center here is considering shifting the - com loop to the Vanguard Ship which is parked out south of Bermuda somewhere mid-Atlantic. The communications are still quite good. They were just extraordinary through the first 6 minutes of flight. At 9 minutes, 30 seconds into the flight, all systems are in excellent shape. We are now predicting shut down at 10 minutes and 20 seconds, 10 minutes 20 seconds into the flight. We are now coming up on our mark 10 minutes into the flight, mark 10 minutes.

SC RP Delta, please Cap Com.

FLIGHT RP Delta Apollo 7.

HANEY 10 minutes, 10 seconds.

FLIGHT (garble) to Apollo LOS.

SCHIRRA Roger; understand.

HANEY And - we got a cut off that sounded to me like at about 10 minutes, 19 seconds, Schirra confirmed it. And Eisele noted that it felt a little different than when they were on the booster; when that cut off came through. They will remain attached to the S4B that second stage and they will be given a GO to stay in the planned configuration, attached to the second stage for perhaps - nearly 3 hours.

FLIGHT (garble) we have you GO for orbit.  
Go for orbit.

HANEY And the control center has relayed word here, "We show you GO for orbit."

END OF TAPE

HANEY And the Control Center has relayed word here, we show you go for orbit. For the first six revolutions around the earth, it will be a revolution by revolution consideration, but these cutoff parameters were just nearly as perfect as they could be from the looks of our plot boards. 11 minutes 30 seconds and the crew has been advised that the S-IVB systems have been safed. The electrical circuits are shut down and the booster is considered in a - a quite safe configuration. Some residual liquid hydrogen and liquid oxygen remaining aboard, that will be vented as we move through this first revolution.

HANEY This is Apollo Control in Houston at 13 minutes into the flight. We are still getting excellent communications from Apollo 7 which is now in the middle of the Atlantic Ocean. The quality of the voice com is not that what it was in the first few seconds, but it - the first few minutes - but it is still quite readable. We have reracked the entire voice communications from liftoff through staging. We are prepared to play it for you now and it begins at T-30 seconds. Roll the tape, please.

ROOSA And Apollo 7, stand by for the 10 second count.

SC Understood.

ROOSA 10, 9, 8, 7, 6, 5, 4, ignition.

CAPE (garble) liftoff.

CAPE Clear of the tower.

CAPE Roll commence.

SC Pitch is tracking good.

CAPE Roger.

SC At a thousand five degrees.

CAPE Roll complete.

SCHIRRA Roger, she running - it's getting a little noisy now.

CAPE DDS manual.

SC Roger one Charlie.

CAPE Roger, we're go here, Jack.

HANEY This is Apollo Control in Houston, 21 minutes into the flight. The ground and the crew finally got to the right antenna with the spacecraft over the Canary Islands and until that point, the com, from approximately mid-Atlantic on into the Canary area was pretty rocky - pretty rough and they went to one of the antennas which apparently was pointed in the proper direction and the com cleared up markedly as you will be able to observe as we play this voice tape. I've checked with the flight director, he tells me that Schirra heart rate at liftoff was 87 beats per minute - 87 beats per minute at liftoff. And at stag-

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22/2

HANEY ing when the first stage burned out  
and the second stage ignited it hit it's high point -

END OF TAPE

HANEY ... stage burned out and the second staging ignited it, it hit its high point during the entire mission of 100 beats per minute. One hundred beats at staging, 87 at lift-off; which is, I can never recall a lift-off heart rate in the 80's, I can recall some in the 90's and I think they were Wally's. Here is some tape as we came into the Canary zone and the crew have talks about looking out the window and observing the Canary Islands.

FLIGHT 5, 4, 3, 2, 1, mark, 17 minutes GET.  
SCHIRRA (Garble)  
FLIGHT Right, you won't need a CMC lift-off update. You're okay then.  
SCHIRRA (Garble)  
FLIGHT Apollo 7 say again.  
SCHIRRA (Garble)  
FLIGHT Okay, we're reading you about 2 by, we're really trying to do some reconfiguring here to get good com. with you.  
SCHIRRA (Garble)  
FLIGHT I can't make it out Wally, standby.  
SCHIRRA (Garble)  
FLIGHT Apollo 7, Houston, how are you reading now?  
SCHIRRA (Garble)  
FLIGHT Okay, you're loud, but very garble, Wally.  
SCHIRRA (Garble)  
FLIGHT All your systems look real good down here.  
SCHIRRA (Garble)  
FLIGHT I couldn't make it out. Do you want slip simplex A?  
SCHIRRA That's land out there. Little island down there, can you see it. Walt can, I guess.  
FLIGHT Apollo 7, Houston. How do you read now?  
SCHIRRA Houston, Apollo 7. How do you read on simplex A.  
FLIGHT You're real fine now, real fine Wally, and we've got you coming through an intercom.  
SCHIRRA That's clever.  
FLIGHT Okay.  
SCHIRRA No, we're broadcasting to you.  
FLIGHT Oh, okay, I was just wondering. I couldn't see what you were describing there.  
SCHIRRA We're looking at the Canary Islands.

FLIGHT Oh, you're making me jealous.  
 SCHIRRA We've completed the first check list,  
 with the exception of the four circuit breakers of panels  
 277 and 278.

FLIGHT Roger, we copy.  
 SCHIRRA He hasn't posted this yet. It's loud  
 and clear over here, Jack; good weather report.

FLIGHT Roger, you're 5 by also.

S/C This test deserts.

HANEY This is Apollo Control in Houston with  
 25 minutes into the flight. The crew after a very brief  
 20 minute flight across the Atlantic Ocean is now going  
 across the African Continent. We've lost touch with them  
 as they move across Africa. The official launch time was  
 15:02:45 zulu time or Greenwich mean time, 15:02:45. Our  
 present orbital parameters are 122 by 151, 122 nautical  
 miles by 151 nautical miles; and we now begin to settle  
 down to look at the business of the flight plan and one  
 of the first events after leaving the Canary zone is to  
 close the liquid hydrogen vent and it should be closed  
 very shortly. At Tananarive, the Spacecraft will go into  
 it's first sunset. We will be talking to them through  
 Tananarive. The Tananarive station should acquire along  
 about 36 minutes into the flight. We're presently 26 min-  
 utes into the flight. This is Apollo Control Houston.

END OF TAPE

HANEY This is Apollo Control in Houston at 36 minutes into the flight. In the last minute or two we have reviewed the g data recorded on this flight and the curve is a very gentle one on the first stage, and it peaked right at about 4 g's, and of course it falls back to zero g for a short time and then it begins a gentle climb again and at the second stage shut down, some 10 minutes and 20 seconds into the flight, it was peaked out on the second stage at about 2 and a half g's. We heard the crew remark at least once, perhaps several times, about what a gentle ride it was. Glenn Lunney, our flight director, has gone around the room console by console. He opened that session with these words. "Okay, everybody, lets - we've got a long way to go. Let's sit down and look at what we've got." He then went through each system and questioned each man about his particular specialty area during the launch phase and he got no surprises. We have tagged up with the crew now over Tananarive. We've put in a call, and at this point we've not heard from them, but Schirra should be installing an alignment site in his window. This will help him - it is something like a bore sight - it will help him do a number of tasks and he will use it to look at all sorts of objects during the flight. Very shortly we should open the liquid hydrogen vent valve and thin out some of the residual fuel in there in the liquid hydrogen tank, and over - that will take place over Carnarvon some 54 minutes into the flight. They say the call went in by the Tananarive station about two minutes ago. We've not heard from the crew. We are getting a rather steady carrier noise on the line. We'll standby and come up with that communication as it develops.

HANEY Apollo Control here at 42 minutes into the flight. Tom Stafford, one of our capsule communicators, has been running a HF voice communication check. We heard from Apollo 7 loud and clear, but they apparently can not hear us, and we're going to continue this voice check by HF, which is the hard way, of course, and let's listen now as Stafford tries to contact the spacecraft.

HANEY Apollo Control here again. We're still attempting to establish HF communications. We want to emphasize that there is nothing wrong at all with our UHF channel via the other means of communication, but we are exploring just how good the HF system is at this extraordinarily long range. Apparently the communicator at the Tananarive station may be hearing something from the spacecraft we are not. It is just a shake down test of the total communications capability that we have, and we'll leave the carrier up, although it looks like they are moving out of the range of Tananarive. We'll leave it up another

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24/2

HANEY                    minute or two. At 44 minutes into  
the flight, the crew getting its first look at the Indian  
Ocean after departing the african continent. This is  
Apollo Control Houston.

END OF TAPE

HANEY And this is Apollo Control Houston at 52 minutes into the flight. In a very few seconds, we will put in a call to the crew by the Carnarvon station on the west coast of Australia. I just got a call that Carnarvon had acquired - the acquisition aid had locked up. The discussion over the Australian pass is always an interesting one and here comes the com now. Tom Stafford from here.

SC This is firm, we are having a ball.  
CAP COM Roger. We read you loud and clear over Tananarive Wally, but evidently you could not read us.

SC Affirmative.  
CAP COM Okay, we have a new time for your LOX dump. The -

SC Wait a minute. Okay, go ahead, Tom.  
CAP COM Roger. The S IVB dump will occur at 1 + 34 + 27. Estimated DELTA V of 32 feet per second. Did you get that, Walt?

SC Roger. 1 + 34 + 27, 32 feet per second.

CAP COM Roger.  
SC Do you read?  
CAP COM Roger, we got them.

SC Okay, we've completed about the first checklist down to where the CMP has to get out of the couch, standing by for your GO/NO-GO.

CAP COM Roger.  
SC I'll give you a little fast report on what we want here.

SC The windows appear to be almost crystal clear, which is good news for all of us. And we have very good visibility out of all five windows and that center hatch one, there is a drain for monitoring boost.

CAP COM Roger.  
SC We've noted the airglow here and made some dirt on it. It looks like it's about 3 degrees thick as we approached Carnarvon at night of course, we measured that with a ...

SC (garble) at 12 o'clock, guess ... arrived at 12 o'clock this trip.

CAP COM You've seen me before.  
SC (Laughter) Roger, came into view 3 degrees before the top of the airglow, where that was the surface of the earth.

CAP COM Okay.  
SC I'll see if Donn and Walt have anything to say, affirm.

CAP COM Okay. Standby, they want to get you a nav load right now for the GO/NO-GO. Stand by.

SC Roger.  
CAP COM Apollo 7, Houston.

SC Go ahead.  
CAP COM Roger. Have a go, and guidance would like to send you an update.  
SC Roger, stand by.  
SC Roger. We're in block, will go to accept on your call.  
CAP COM All right. Go to accept.  
SC We are in accept. Understand we'll go for 2 up.  
CAP COM Affirmative. Roger, Jack, I'm observing your rewinded tape dump. We would like to get a good reading on GO/NO-GO on the DFC as soon as you can.  
SC Okay. Total of LOX dump was 1.34.27, 32 feet per second.  
CAPCOM Roger. We copy. Okay, it's coming up.  
CAPCOM Apollo 7, Houston. The load is in, has been verified, the computer is yours.  
SC Very good.  
HANEY This is Apollo Control Houston. The platform in the guidance component of the spacecraft checked out very nicely. It's within less than a half of a degree in all respects, precisely where it should be. The angles have all been taken into consideration now. As we move across Australia, we would anticipate from the crew that they had begun to remove things, like gloves and their lifevests, and probably their helmets. The lunar module pilot Walt Cunningham, should be finishing up his insertion checklist, his extensive list. Let's go back to the crew.  
SC He is taking off his suit now, Walt and mine still on. We get an O2 flow high when Donn opens up the suit and we analyze that as the suit rate trying to catch up to the cabin, so we are go.  
CAPCOM Okay, we copy.  
SC Okay Jack. We've got the suit flow valve off and the O2 flow is dropping down.  
CAPCOM Okay, we copy.  
SC No problem, it's just that we haven't seemed to be able to stop at the right thing.  
CAPCOM Hey Jack, do you think they will be able to get the tape recorder rewound before we deliver that?  
CAPCOM Stand by.  
CAPCOM Apollo 7 Houston. We've got the tape recorder rewound over Canaries. We will do a dump over Mila.  
SC Roger.

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CAPCOM We would like to have a reading of just  
what you have on that tape, because we were talking on it  
continuously.

SC OK. Will do. We'll do that over the  
stateside pass Walt.

END OF TAPE

CAPCOM Apollo 7 Houston. Apollo 7 Houston  
HANEY This is Apollo Control Houston. We  
have lost signal via the Honeysuckle Creek outside of  
Canberra, Australia. It is a new station to join our  
network, and we should not hear from the crew again until  
the ship Huntsville parked half way between Hawaii and the  
coast of California picks them up at 1 hour and 24 minutes  
into the flight. We are 1 hour and 7 minutes into the  
flight right now and that was not a particularly communica-  
tive pass. We had a little calm in the early part. Appar-  
ently the crew going through their initial stowage of such  
things as the helmet the gloves. They're getting out pieces  
of equipment and getting squared away for the early revs  
of the flight. The stowage list called for the command  
pilot to stow various temperature devices, flight date  
files, install a urine filter, and adjust the couch position.  
They will be also unstowing and assembling some cameras,  
and loading them with film as they fly in a northerly dir-  
ection up across the Atlantic, excuse me, the Pacific. A  
reminder, we are flying at 32 degrees north and south of  
the equator on this flight as opposed to the 28 degrees  
we flew throughout the Gemini program. We flew 32 degrees  
in Mercury and we are back at that altitude, at that  
longitude. At 1 hour and 8 minutes into the flight, this  
is Apollo Control in Houston.

END OF TAPE

HANEY                      This is Apollo Control Houston at 1 hour 21 minutes into the flight. We've just had a little thrill here in the Apollo Control Center in Building 30 in Houston. We had a rather complete power outage in the building, the first one I can recall in the history of this particular control center. We didn't lose all power, of course. Certain critical elements like the computers continued to run on emergency power lines, and emergency power circuits left certain lights, exit lights and that sort of thing lighted in the halls. But all of our consoles went dead, lost power. Our lights were out here in the control center except for certain emergency red lights. I would clock the outage as occurring about 20 minutes after the hour and lasting perhaps 60 to 90 seconds, about a minute - minute and a half duration. We have verified that all the computers, the critical computers running on line with this mission, continue to run. They are located on the first floor of this building. We were not in contact, of course, with the spacecraft at the time, and had we been we would have continued to be able to go out of the building. All of our Com circuits continued to work, we were simply without lights, and we didn't know, in other words these Com circuits are set up in such a way that we know whether we are radiating by a flashing white light or we are monitoring when we simply have a steady yellow light. On each console you have such an array of buttons to various back rooms and to points outside of this building, to the Cape, to other places. We lost power on all those kinds of circuits, we lost all of our video capability to monitor the various slides and we do not yet have an explanation of just how or why this occurred. But at 1 hour and 23 minutes into the mission we are back up in good shape with full power. This is Apollo Control in Houston.

END OF TAPE

HANEY This is Apollo Control Houston 1 hour 25 minutes into the flight. Capsule Communicator Tom Stafford is putting in a call to the communicator on the ship Huntsville half way between Hawaii and California. Let's cut in on that conversation now.

CAPCOM Roger. Are we transmitting simultaneously and receiving VHF?

HTV Affirmative.

CAPCOM Roger. Are you going to contact - have you heard Apollo 7?

CAPCOM Apollo 7, Houston

HTV Houston COMTECH Huntsville.

CAPCOM Go ahead Huntsville.

HTV Apollo 7 copied you loud and clear.  
 Apollo 7 copied you loud and clear. Go ahead and we'll relay.

CAPCOM Roger Apollo 7 this is Houston CAPCOM. understand you are reading. Go ahead and relay through the Huntsville the S4B tank pressures. And again just to remind you to call Program 47 prior to the lock stop

CAPCOM Huntsville M and O Houston CAPCOM.

HTV Go ahead, Huntsville M and O.

CAPCOM Roger. Did Apollo 7 get the message?

HTV Negative. We can only copy him when we are dead band logged. We are presently experiencing trouble with logging two way VHF Band.

CAPCOM Roger, you can't read any VHF?

HTV Negative at this time.

SC Houston, Apollo 7. Do you read?

CAPCOM Roger Apollo 7, read you loud and clear.  
 How else?

SC Okay, the readings are 24241313.

CAPCOM Roger 24 and 13 Wally, now reading you loud and clear.

SC Now we are turning them on both A and B and I have that logged.

CAPCOM Roger

SC (Garbled)

CAPCOM Roger. Did you get me transmitting in the line over the Huntsville, Wally?

SC I don't think so, what was that, Tom?

CAPCOM Well, I just - to read the tank pressures and to call program 47 prior to lock stop.

SC Roger. We have that data. I have tank pressures at 1 (garble) 6 plus 15 1 (garble) plus 5 0 if you are ready to copy.

CAPCOM Roger, we got it.

SC 23 23 8 then 8. That's 1 plus 06

CAPCOM Apollo 7 Houston, You faded out completely.  
 We'll contact you over California in a couple of seconds

SC Roger data plot.

HANEY This is Apollo Control Houston 1 hour 31 minutes into the flight. We should establish contact through Guaymas momentarily. To recap a bit on that power outage that we experienced about 10 minutes ago, I clocked it at 20 minutes after the hour, the duration was something on the order of 1 to 2 minutes, and initially it was a rather complete power outage. We still had communications on the circuits, but we did not have the light showing us on which circuits we had communications. We were not in touch with the spacecraft at the time, and the computers, the critical computers, the on line computers continued to run through a separate and a secure emergency power source. Since that time, for about the past 5 minutes, we have been without our TV data displays until such time as additional power could be brought over on that circuit. Now we have the spacecraft in touch, and lets listen to Tom Stafford and Wally Schirra discuss the situation.

SC that data on the SYV now?

CAPCOM Apollo 7 Houston

SC Go ahead.

CAPCOM You might tell Walt, what they did they rewound the tape recorder over Canary and if he has any additional voice that he wants to place on he can place it on there now. They'll dump it again over Mila.

SC Yes, thank you.

CAPCOM Okay, they didn't get your remarks on booth because they rewound it over Canary, Walt, per the flight plan.

SC Okay, well all needle readouts were normal, and I didn't list them individually on the insertion text, and it's on the tape and that's about the best we can do.

CAPCOM Okay, and we're standing by for the dump shortly.

SC It's a fantastic rev up here.

HANEY This is Apollo Control Houston at 1 hour 34 minutes into the flight. Apparently there is some discrepancy in our earlier report on the power outage. I want to absolutely emphasize that there was no affect at all on the computers in Building 30. I repeat. No affect. They have an emergency power source which cut in and handled that load just perfectly. We did lose light in the building in the halls, and we lost lights on our console. We continued to have communications, however, we continued to have phone service. For a period of about 1 to 2 minutes we were without most of the lights in the building, and we were able to see through an emergency over head system a faint red light which illuminates regardless of - in case of complete power outage. But again I want to

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28/3

HANEY emphasize there was no power outage at all on the computers tracking this mission. We'll go back now and listen to the events as we move across the states.

END OF TAPE

S/C (Garble)  
CAPCOM Okay, Houston, the dump appears to be proceeding normally.

S/C Egress.  
HANEY This is Apollo Control Houston with the Spacecraft just east of New Orleans and proceeding toward Elean Pass, it will take it almost directly over Savannah, Georgia. We are 1 hour, 40 minutes into the flight and we have completed at least the initial part of the oxygen dump, and we have now opened the liquid hydrogen vent valves. They will shortly be closed at the completion of that exercise. The liquid hydrogen valve is to be closed in 1 hour, 45 minutes into the flight, just east of Florida. About a minute later, we'll stop the - stop dumping the residual lox. Earlier, the booster console operator told me there should be a - on the order of 1 percent residual liquid oxygen in the S4B, which remains attached, of course, to the Spacecraft; and 1 percent with in terms of weight would be 1000 to 1500 lbs. Very little conversation from the crew as they came across the States in this pass, but we did get a good look at the systems, we got a cabin that stabilized at about 5.3 psi. We know the temperature is running a steady 66 degrees inside. Earlier by the Australia stations, Schirra reported that they're having a ball and he was enthusiastic over the fact that the windows have not clouded at all, this was a recurring problem in Gemini. He also commented as they moved across Australia, what an advantage it was to watch the booster operation through the center hatch window, one of five windows available. We are now starting our Helium dump from the S4B, and again no conversation at all on this eastern portion of the State swing. Here is a call.

CAPCOM The dump is initiated.  
S/C Roger.  
S/C Houston, Apollo 7, I have a PP02 for you. I'm reading 165.

CAPCOM Roger, a PP02 at 165.  
S/C Roger.  
S/C Houston, Apollo 7, our cabin press now is being - very ragged, it seems to be down to about 5.5.  
CAPCOM Roger, 5.5 on the cabin.

END OF TAPE

SC This is Apollo 7.  
 CAP COM Houston to Apollo 7.  
 SC Apollo 7, GO.  
 CAP COM Roger; could you verify that the S5B  
 pass position is complete?  
 CAP COM Okay, stand by Wally.  
 CAP COM I can stop program for you, 7.  
 SC Roger, the preservation is complete and  
 you can terminate 47.  
 CAP COM Roger, you have a read out of DSKY. We  
 got it. We're waiting-for an update on (garble) for program  
 52.  
 Roger.  
 CAP COM We're working on it right now.

END OF TAPE

HANEY This is Apollo Control Houston, 2 hours, 15 minutes into the flight. We have established contact with the crew via the Tananarive station and here's how the conversation is going.

CAP COM Houston through Tananarive, how do you read?

SC Loud and clear, Tom.

CAP COM Roger, we're getting a lot of background noise on the HF coming in here, but you're coming in loud and clear.

SC Roger, you were putting through a lot of echo but you were quite readable. We just ran through an Arian constellation so we're very pretty.

CAP COM Roger, how do the stars look through both the telescope and sextant compared to the simulator?

SC A little bit better.

CAP COM Roger.

SC We're entering the constellation (garble)

CAP COM Real good. Okay, we're going to give you a time hack at 40 minutes to go till separation in about 2 minutes.

SC Roger, I'll reset my dial.

CAP COM And we have a GET for the pitch down maneuver and the inertial maneuver. Do you want to copy it?

SC Wait a minute. Roger, Tom, we have the clock for dead ahead and we have a blank for GET.

CAP COM Okay, GET of pitch down is 2 + 42 + 55; GET of inertial attitude, 2 + 51 + 10.

SC Data repeat. GET pitch down at 2 + (interrupted)

CAP COM 30 seconds to go.

SC Roger.

CAP COM 5, 4, 3, 2, 1, Mark. 40 minutes counting down for SEP.

SC Roger.

CAP COM Roger.

SC We're going to try talking to you and we want you to copy.

CAP COM Go ahead.

SC Roger, (garble) I'll quickly read off all (garble) 0693 (garble) turbo 12, turbo 23, 00186. (garble).

CAPCOM Roger

SC (garble).

CAP COM Apollo 7, Houston. What was your star angle difference, that's the only one in question.

SC 4 + 2  
 CAP COM Not bad.  
 SC (garble) go on to another (garble).  
 CAP COM Roger.  
 SC We've got a real nice clean cabin here,  
 very few particles floating around.  
 CAP COM That's good.  
 SC There are two very small particles,  
 (garble).  
 CAP COM Okay.  
 SC (garble)  
 HANEY This is Apollo Control Houston. We  
 have loss of signal by Tananarive. The Spacecraft moving  
 across the Indian Ocean. During the pass across Australia,  
 Carnarvon should acquire about 10 minutes - about 8 minutes  
 from now, 2 hours, 28 minutes into the flight. We will  
 be set up to decide on whether we will proceed with the  
 crew takeover, the crew flying of the S4B. I understand  
 this configuration we are in right now, we essentially  
 have a spacecraft about 100 feet long. Consider the  
 Command Module, the Service Module, the slaugh panels and  
 the nearly 60 foot long second stage S4B, still hooked up  
 together and the second stage is to be unhooked and jettisoned  
 at 2 hours, 55 minutes into the flight. That would occur  
 after the crew has gone through an exercise whereby they  
 will get the feel of what the control problems are and just  
 how does it feel to fly such a big kluge from the advantage  
 point of the command module. The - Donn Eisele, the center -  
 the command module pilot, will return to his couch. He has  
 been down in the lower equipment bay looking over some of  
 his gear and going through some stowage and unstowing  
 activities. He'll return to his couch for these up coming  
 activities with the S4B leading up to the separation. When  
 we acquire at Carnarvon, we'll come back to you. This is  
 Apollo Control Houston.

END OF TAPE

HANEY The ship Huntsville parked half way between Hawaii and the coast of California picks them up at 1 hour and 24 minutes into the flight. And that was not a particularly communicative pass; we got a little COM in the early part, apparently the crew going through their - This is Apollo Control Houston, 2 hours, 28 minutes into the flight. We have established contact with Apollo 7 by Carnarvon, and the crew has been given a GO. We are getting some conversation with the crew now; let's check in on it.

SC Way up there.

CAP COM Okay, we copy.

HANEY Well, we've got a dead period here. We want to clarify. Perhaps earlier we had given an indication that the control thrusters during this S4B takeover would be thrusters on the service module; that's not correct. They are the thrusters, the small pitch control thrusters on the second stage, the S4B itself. The crew will be operating those from the cabin through logic circuits down through the instrument unit which is the principal electronic element joining the booster and the spacecraft. That event of course is presently programmed for 2 hours and 55 minutes; we are at 2 hours and 30 minutes right now. We should get some reports on the attitudes as we move across Australia and we'll just leave the line open.

CAP COM Apollo 7, Houston.

SC Roger Houston, go ahead.

CAP COM Wait Wally. I'm sorry; we'll wait till you get through with this before we take over here.

SC Roger; we're right in it.

CAP COM I'm sorry.

HANEY The Apollo 7 crew is controlling the total spacecraft and booster combination at this time through the thrusters on the S4B. Here is Schirra.

SCHIRRA Pitching up.

CAP COM Stop.

SC Did you get that?

CAP COM Roger; we copy.

SC 3, 2, 1 mark.

CAP COM Minus roll..

SC Isn't enough to grab.

SC 90 degrees.

CAP COM Up for 5 degrees.

SC 3, 2, 1 mark.

CAP COM Next will be thrust roll for 5 degrees.  
3, 2, 1 mark.

SC Roger, coming back in.

CAP COM It's standing very well.

CAP COM 3, 2, 1 mark. Very good. Minus yaw  
for 3 degrees. 3, 2, 1 mark.

SC Thank you. (garble)  
 CAP COM 3, 2, 1 mark.  
 SC Right on it.  
 CAP COM Touch off at 3 degrees. 3, 2, 1 mark.  
 SC Roger, coming into it.  
 SC There's is much (garble) with this thing.  
 CAP COM 3, 2, 1 mark. S4B test complete. Beautiful. Real fine; outstanding. You want to hit your logic down so we can look at that?  
 SC Second logic on. Logic on.  
 CAP COM Okay, we copy. And after Carnarvon air which we'll lose you here in about 2 minutes, we are going to do some remoting through AIRA to get, complete this DTO.  
 SC Very good. (garble) S4B (garble).  
 CAP COM Okay.  
 SC Interesting side line - when the power (garble) failed.  
 CAP COM Okay Apollo 7, you're GO for PR.  
 SC There you are.  
 CAP COM RVR  
 SC We can see on the night side, the aps thrusting on the S4B.  
 CAP COM How so?  
 CAP COM As a rule, flight's just like Gemini?  
 SC It's - pretty good blob of light; it's sort of a yellow orange light.  
 CAP COM Roger..  
 SC Okay, pick up that tape.  
 CAP COM Apollo 7, when you are dumping some of our tapes, we'll be going live on some of these things to make sure we have complete coverage.  
 SC Okay.  
 SC Direct RCS on. That's on. Control SCS. D make made modes all for 82. SCS channels; 4 of them on. (garble) at the rate command. Think command on 3. Tape recorder record. That's the (garble) stand by for their (garble) on that.. (garble) TDP circuit power, AC1 (garble). Circuit breakers EDS, three of them closed. (garble) test logging verified. ES power on. That would be Delta V counted as zeroed.  
 COMM AIRA 2, go remote.  
 CAP COM We call for EDT to be sent here.  
 COMM AIRA 2; there is 2 way lock; AIRA 2, there is 2 way lock.  
 CAP COM Apollo 7 through AIRA; how do you read?  
 SC Damn good Jack; how are you?  
 CAP COM (garble) fly by.  
 CAP COM Okay, Wally, AIRA 2 had this for about 10 minutes here and then we'll pick up AIRA 3 for about another 10 minutes.

SC Very nice (garble).  
 CAP COM Do you think you'll like those REA's there?  
 SC Jack, can you verify that the tape re-  
 corder here and we'll go to high pitch rate for the S4B  
 maneuver?

CAP COM Okay, stand by.  
 SC We're running through them.  
 CAP COM You going to want me to (garble) high  
 pitch rate?

CAP COM Okay, Apollo 7 - E COM tells me they  
 will control it for depth.

SC (garble) 34 depth.  
 HANEY This is Apollo Control, Houston. The  
 crew has completed the maneuvers using the S4B thrusters;  
 you heard Walt Cunningham going through the countdowns and  
 giving Wally Schirra each of the angles and in essence,  
 amounted to going to 5 degrees in every attitude visual and  
 yaw in these twice. Wally seemed impressed with the handling  
 characteristics of this nearly 100 foot combination of booster  
 and spacecraft. We are now remoting through a series of  
 aircraft which are strung out across the, or flying in  
 large square patterns in the southwest Atlantic, southwest  
 Pacific. We should have continuous comm with the spacecraft  
 up through Hawaii. Hawaii is to acquire; stand by one here.  
 Hawaii is to acquire at 2 hours, 53 minutes into the flight.  
 It'll be then within the Hawaii area of acquisition that  
 we will separate from the S4B. If this were the lunar mission,  
 that is approximately the point where we might very well  
 ignite the S4B over the long burn out to the moon to put us  
 on a lunar trajectory. At 2 hours, 39 minutes into the flight,  
 this is Apollo Control standing by for any additional comm.

END OF TAPE

COMM                    Calling ARIA 3 aircraft.  
CAPCOM                 Apollo 7, this is Houston through  
ARIA 3, over.  
SC                      (Garble)  
CAPCOM                 We can read you about 1 by, Wally.  
Apollo 7, Houston through ARIA 3. How do you read now?  
SC                      (Garble)  
CAPCOM                 Roger, you're now coming in about 3 by  
3.

HANEY                  This is Apollo Control Houston, 2 hours,  
45 minutes into the flight and it's unlikely that we will  
have any additional com. during this period, so we will  
take the circuit down now.

END OF TAPE

HANEY This is Apollo Control Houston 2 hours 55 minutes into the flight, and just 30 seconds ago, precisely at 2 hours and 55 minutes, the crew reported they had separated from the S4B. We are in contact over Hawaii, and lets listen for conversation.

SC I can see a thruster firing action in daylight.

CAPCOM Roger, copy.

HANEY This is Apollo Houston, From the ground we know that the spacecraft is pitching over, turning around, and having a good long look.

SC (Garble) way down looks like pieces of chaff. I would assume that came from the separation of the S4B.

CAPCOM Roger, I understand.

SC I assume that she is still there then. Tom, we've got some old (garble) we pitched out.

CAPCOM Okay. Looks like you are going straight in.

SC It's absolutely beautiful here and we got a lot of loose particle chaff sitting at about -

SC Look at it

SC Chaff seems to be oriented mostly between 3 o'clock and 5 o'clock from my report of view in the right seat and between 9 o'clock and 12 o'clock. The other two quadrants are relatively clean and the SLA panel at the top, left, and bottom are opened at I would guess to be about a 45 degree angle and the SLA panel on the right is just opened maybe 30 degrees at the very best.

CAPCOM Roger. Looks like you are looking at a four jawed angry alligator.

HANEY Apollo Control Houston here. That is Walt Cunningham giving that report on the position of the SLA panels. He is in conversation with Tom Stafford who is an expert on angry alligators from the Gemini days. The crew is simulating a docking approach at this time in to the SLA area. They won't go in so close as to touch it, but they will operate in the area. They are taking pictures and in general, they will fly a formation with the S-IVB for the next 10 or 15 minutes. Let's continue the monitor.

CAPCOM Apollo 7, Houston. Go ahead and get the EDS power switch off if you want to.

CAPCOM Apollo 7, Houston.

CAPCOM Hello, Apollo 7, this is Houston, over.

CAPCOM Huntsville M&O, this Houston CAPCOM.

HTV Houston, Huntsville M&O, go.

CAPCOM Roger. Are we getting through to

Apollo 7?

HTV

We cannot acquire the spacecraft pres-



CAPCOM - yaw of 183, 299, 002, remark FPS, heads down, retrograde -X structures. You should be in your retroattitude by 3 + 16 + 30.

SC Roger. Understand update for sep maneuver 0032000, 1641 check 12340005732538, line 38 (garble)002, FPS heads down, retro and use -X structures.

CAPCOM Roger. I din't get your pitch, but I want to give it to you again. That is 299 for the pitch.

SC Roger.

CAPCOM Apollo 7, Houston.

CAPCOM Hello Apollo 7, Houston.

SC Houston, go.

CAPCOM Okay. We expect some nonpropulsive venting up near the front end of the S-IVB between 3 + 08 and 3 + 09. The booster will make a retrograde maneuver at 3 + 16 + 55.

SC Roger. Understand nonpropulsive venting between 08 and 09 and the booster will be retroventing at 31655.

CAPCOM Roger. That when the maneuver will be commanded. You should be able to see it maneuver around.

CAPCOM Apollo 7, Houston. Confirm that your TVC servo power number 1 is off.

SC It is off.

CAPCOM Roger.

SC There is quite a small type debris still inside the S-IVB. Is that gone?

CAPCOM (Garble) after that.

SC Seems to be coming out. What part is it in?

CAPCOM Okay.

SC Paul, the internal structure looks just fine. There is one set of cords that running around - one set of cords running around that seems to be going to a panel that isn't open too far.

CAPCOM Okay. Get some pictures.

HANEY This is Apollo Control Houston, with the spacecraft almost over the central United States. We are getting a pretty descriptive view of what the S-IVB looks like, primarily from Walt Cunningham. He has reported among other things, that one of the four SLA panels is not open completely. They should be back to nearly 90 degree position, I think one of them is open only a third or a half the way. I heard a figure earlier of 30 degrees that will have to be confirmed later. In several times, Cunningham has commented on the venting, the LOX venting from the S-IVB. Apparently it's a pretty spectacular show. We will continue to monitor as they move across the states.

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 03:05:20 35/2

SC We have got a (garble) in the backout of the S-IVB. It should have breezed right across it. We could have a - unfortunately, it's too cloudy for us to look at, Tom, but New Orleans looks good.

CAPCOM Roger. Understand you can see New Orleans.

SC Roger. We got a shot of the booster across the lake cutting about.

CAPCOM Roger, good show.

SC Looks like the entire US is cloud covered until you get over here.

CAPCOM We copy.

SC Looking right down at the Cape. We can get a picture of it in the background.

CAPCOM Understand you can get a picture of the Cape in the background.

SC Cape is not clear.

CAPCOM Roger.

END OF TAPE

SC (garble) count down.  
CAP COM Did you get a picture of them over  
the Cape in the background.  
SC The cape (garble)  
CAP COM Roger.  
SC Got them loud and clear.  
CAP COM Roger, you on top of the booster at this  
time Wally?  
SC Say again.  
CAP COM You on top of the booster?  
SC The right propella; we got some real  
good stuff here.  
CAP COM Good show. Okay, in about a minute, the  
booster should start it's retrograde maneuver.  
SC The booster is - engine is set up facing  
the Atlantic Ocean, we're - we're pointing straight down.  
CAP COM Okay.  
SC Got a very slow rate going - on the  
booster.  
CAP COM Okay.  
SC Except for that - one panel - everything  
looks like just as you'd expect it to be on that S4B plot;  
it's on it.  
cap com Okay, sounds real good.  
CAP COM Okay, we've got about 3 mintues to go  
to the phasing maneuver and are you all set up to roll,  
pitch and yaw?  
SC We've got it all running well and we  
have (garble) smoothly.  
CAP COM All right.  
CAP COM Apollo 7, Houston.  
SC Yes.  
CAP COM Roger. I - our (garble) just confirmed  
that our commercial pitch out per feet is 299 degrees. Okay,  
I'll give you a mark at 60 seconds. 2, 1, mark. T minus  
60 seconds. Minus 30 seconds. 10 seconds.  
SC Very complete.  
CAP COM Roger. Apollo 7, Houston.  
SC Roger.  
CAP COM Roger; you can go ahead and terminate  
program 47, if you want to.  
SC Roger; we have terminated. We are try-  
ing to get a few more pictures after we set; we have made  
the burn one tenth of a second already.  
CAP COM Roger; that's real good; thank you.  
SC John, we are B47 running there a couple  
of minutes early and we picked up about a foot and a half  
per second and registered 2 - I guess you can pick that up  
on your down rate command except I didn't consider whether  
you would want to re-do the state breaker or not.

CAP COM Okay, good. Look, we're gonna have you  
at (garble) in just a couple of minutes and we'd like to get  
a PPOP reading.

SC Okay. Stand by.

CAPCOM And also - what was your closest point  
of approach Wally to the 4B?

SC For about 4 or 5 feet.

CAPCOM That's 4 or 5 feet.

SC (Garble) We're (garble) docked channel.  
To drop things off.

CAPCOM Roger.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 3:25:30 37/1

HANEY This is Apollo Control, Houston 3 hours, 25 minutes into the flight and we have moved out of the acquisition zone of the Antigua station. We should acquire Ascension in a very few minutes. You heard Schirra say that he had pulled up within 4 to 5 feet of the S4B and had done a very close inspection of the SLA Panels. The - 3 of the panels appear to have opened fully which in the fully deployed position is a 45 degree angle; one of the panels stopped apparently at about 30 degrees. On later missions we have or the present thinking is to simply jettison the panels all together so this is sort of a one-time consideration. We - the reason for the jettisoning of the panels in future missions is a point which has brought the thinking to that conclusion. It has to do with the exhausting pingement on the panels as the spacecraft looks directly into the hole, or prepares to make the docking maneuver with the Lunar Module. We will assume that the crew has concluded it's first phasing maneuver of 6.8 foot per second burn which will have a phasing or a shaping affect on the orbit, a very moderate one, and it will move it some distance, I don't just yet know how much distance, away from the S4B. At 3 hours, 27 minutes into the flight, this is Apollo Control in Houston.

END OF TAPE

APOLLO 7 MISSION COMMENTARY 10/11/68 CST 1536 MC38/1

CAPCOM Apollo 7, Houston through Ascension  
SC Go ahead, Houston  
CAPCOM All right, Roger, we're standing by  
clear of PPO2 reading.  
SC Roger, our PPO2 is reading 18 over 182  
180, I guess.  
CAPCOM Roger, copy 182. Apollo 7 Houston,  
could you read us out your reading for cabin pressure?  
SC Roger, cabin pressure is down to 5.2  
and steady, something like that.  
CAP COM Okay, copy, thank you.

END OF TAPE

HANEY                    We have been trying capsule communicator Jack Swigert has been trying to reach Apollo 7 remoting through Tananarive without success, we apparently have some problem as yet not resolved through that Tananarive Station and we've had some other communications problems on the the circuit, these are not unusual and we feel very confident in a rev or two we'll figure out the right combinations of antennas and switches and be up to speed in all stations around the earth. The crew during this period as they move across the Indian Ocean will let us check the flight plan here. air. They're coming in to a sunset - or their in the night - they are in darkness. Donn Eisele is down in the lower equipment bay at his G and N station and they'll be checking electrical voltages very carefully and reporting to them on those checks over Australia and that looks like about the extent of the activity for now. We should hear from them when they come in to range of Carnarvon at 4 hours and 5 minutes into the mission. This is Apollo Control Houston.

END OF TAPE

HANEY This is Apollo Control, Houston 4 hours, 4 minutes into the flight. We are in touch with Apollo via Carnarvon and Walt Cunningham is going through the circuit breaker check with us to the pyrotechnic lines. We will tune in on the conversation now

CAPCOM Apollo 7, Houston through Carnarvon.

SC You are loud and clear.

CAPCOM You are loud and clear, also.

SC Houston, This is Apollo 7. I checked the burner 3 on Main B in AC bust 2 all phases normal. I checked Converter 3 on Main A, AC 1, all phases normal. This commence the ACS redundant component check, we need your cooperation for manifold pressure readout.

CAPCOM Roger, We copy.

SC If you are ready on the ground, we are going to start checking our (garbled)

CAPCOM Okay, Apollo 7, Houston, we are ready to copy.

SC Main Brake, D valve closed. Emergency cabin pressure valve to 1. Emergency cabin push to test push button push. 02 flow went high, can you give us a reading on the amountable pressure?

CAPCOM Roger, 105.

SC Thank you. Main Brake D valve open. Main Brake A valve closed. Emergency cabin pressure valve to 2. Emergency cabin push to test push button push. Okay, it is working now that we have missed them.

CAPCOM 104

SC 104. Main Brake A valve open now. (garbled) valve closed. We intend to flow our secondary radiators when we get that far on this list.

CAPCOM Roger, copy

SC We went a long period of time here with tape voice and data phone. I think it would be good if we go over the horizon and you don't get that thing back into a operating mode, let us know if you can.

CAPCOM Roger.

SC We're absolutely counting on being able to record the data on the tape.

CAPCOM Okay. Okay, Apollo 7, Houston. We're not going to be able to finish the dump here over Carnarvon so you'll still be barber pole to Hawaii. We'll finish the dump at Hawaii then.

SC Roger, understand in some cases it would seen that it would be desirable for us to go ahead and hit command reset and get that tape moving forward. So in order

SC to avoid any confusion in dumping or in  
writing over stuff you haven't dumped, please let us know.  
CAPCOM Okay, will do.  
SC Pyro B, 37 and pyro A (garbled) circuit  
breakers are out.  
CAPCOM Okay, Batt C voltage.  
SC Batt C's reading 37  
CAPCOM All right change in verter phase voltages.  
SC All verter phase voltages are nominal.  
I will call nominal at a hundred  
CAPCOM Apollo 7, Houston, 1 minute LOS Carnarvon  
and we have ARIA coverage here for another 10 minutes.  
SC Roger, we are here, go ahead.  
CAPCOM ARIA 3 go remote. Apollo 7, Houston  
through ARIA 3. Apollo 7 through Houston, through ARIA.  
Apollo 7, Houston through ARIA standing by  
ARIA 3 (garble)  
CAPCOM Apollo 7, Houston through ARIA 3.  
Haney This is Apollo control at Houston.

Apparently not much luck through the ARIA aircraft North of  
Australia so we will take a line down at this time. The crew  
we should next hear from the crew when they reach Hawaii at  
4 hours and 30 minutes into the flight and at that time they  
will conduct a bias check on something called the PIPA, the  
P I P A. PIPA stands for the Pulsed Integrating Pendulous  
Accelerometer. I hope everybody copied that. It is a part  
of the guidance system and related to platform kinds of drift  
in past space flights. At least the check they will perform  
is that sort of check over Hawaii and on across the States.  
At 4 hours and 15 minutes into the flight, this is Apollo  
Control, Houston

END OF TAPE

HANEY This is Apollo Control Houston 5 hours 11 minutes into the flight. We have some tape backed up from the last stateside pass beginning out in Hawaii. It was a fairly quiet pass as the crew was eating its first meal in space, but in the course of the pass, Schirra commented that he had had the - that he had chalked up the - had his first cup of coffee in space. In this particular spacecraft we have water available which is as warm as 150 degrees and Wally insisted on taking some coffee along on the flight, and of course he had to squeeze it into a bag and I am sure it wasn't the easiest thing to drink but he indicated that it was very enjoyable. The crew completed their first meal in the course of the pass and the current orbital numbers read like this: 165 nautical miles by 124 nautical miles. That is as a result of the initial maneuver by the command module and the command module presently is leading is slightly below the S-IVB. It is about 15 miles separation distance between the two and that is growing - that is growing at a small rate - but over a period of perhaps 8 to 10 12 hours the two will be separated by about 100 miles. Again the orbital numbers are 165 miles by 124. Both nautical readings. Schirra did report that their IVA maneuvers - that is, their moving about - the crew movements within the spacecraft changing couches, Donn Eisele moving down to his station in the lower equipment bay did not seem to be generating any change - Delta V kinds of changes within the spacecraft. In other words it wasn't accounting for any great bias or accelerations or deviations from their plotted flight path. As I said, we have got about 10 minutes of tape backed up and we will play it for you now.

CAPCOM Apollo 7, Houston. 40 seconds to LOS. We will have a - about a 3 minute loss of comm here since Huntsville lost the voice. We will pick you up over California about 38.

SC Roger.

HTV Houston CAPCOM, Huntsville.

CAPCOM Go ahead.

HTV ... we believe we have voice back.

CAPCOM Try remoting VHF? I don't - I don't --

HTV Would you try contacting the capsule VHF?

CAPCOM Okay. Well I transmit simultaneously.

Apollo 7. Hou CAPCOM crew to Huntsville. How do you read? Okay, bye bye Walt. We just wanted to make a voice check through Huntsville.

SC Okay, Jack. If we have made all of these good voice checks, I would like to catch up up here a little bit on our food.

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 5:11:00 41/2

CAPCOM Sure.

(Pause)

CAPCOM Apollo 7, Houston. If you will go to  
up link to accept, we will give you - we will send you the  
state vector target load and resume

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 5:15:00, MC42/1

CAPCOM to uplink accept will give you - send  
you state vector target load and rest match.  
SC speed check  
CAPCOM All right, we've got it. Coming up.  
SC Ready to copy the (garble) if you've  
got it.  
CAPCOM I don't have it yet Wall, stand by.  
SC Jack, you can tell Chuck Arthur, we've  
got a washer for him.  
CAPCOM Say again.  
CAPCOM Okay, I understand you have a washer for  
him.  
SC That's correct got (garble).  
CAPCOM Okay.  
SC We'll try to give you some more (garble).  
CAPCOM Okay.  
SC You understand they did the tumble  
test in the plan.  
CAPCOM Roger.  
SC 5044432 via shot frame 50 on S0368  
magazine M.  
CAPCOM Okay.  
SC As I pointed out to you in real time we  
cann't record right now.  
CAPCOM All right.  
SC Houston for the VMS bias turn at 146  
feet per second in 5 minutes. Over.  
CAPCOM Roger, how many feet per second in  
five minutes, Wally.  
SC .6  
CAPCOM Roger, I understand, .6.  
SC The negative is unity .6.  
CAPCOM Roger, got it.  
SC That's on the Delta V time.  
CAPCOM Roger, Wally  
CAPCOM Apollo 7, Houston, all three loads are in  
and varified, we are ready to pass up here - maneuver pass.  
SC Do you copy, Bill.  
CAPCOM Okay, 6-4008590843 minus 03194 plus all  
balls plus 039531530 minus 03700497032460 minus 086 minus  
0300 plus 2445359033200817 paul ball minus 2687 minus 00376  
1631180180000.  
CAPCOM Do you still read, Houston.  
SC I read you fine  
CAPCOM Okay, read that (garble) 6-4008590843  
minus 03194 plus five balls plus 039531530 minus 037004970  
32460 minus 086 minus 03002445390332008170000 minus 6207  
minus 037761631180180000. Over.

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 5:15:68, MC42/2

CAPCOM Roger, there's a correction on your  
Noun 43 longitude, it should be minus 03376.  
SC minus 03376. Roger.  
CAPCOM Okay, and I'm ready on your manual  
retro attitude update.  
SC Do what?  
CAPCOM And remarks walled on - for your fixed  
edge update there, star check is not visible after 08 plus  
40 plus 00.  
SC 084000 before then.  
CAPCOM Roger. Let me know when you're ready  
to copy that S 20.9 manual retro update.  
SC Ready to copy, go ahead.  
CAPCOM Okay. Read the - from top to bottom  
6 plus 106 plus 50 roll 979180 pitch 138241 yaw 360359. The  
first one is a day, second one is a night.  
SC Okay, now I'll read back right across the  
top line 6 plus 10 roll 179 pitch 138 yaw 360 day, second  
one is 6 plus 50 roll 180 pitch 241 yaw 359 night. Over.  
CAPCOM All right, that's got it. Apollo 7 the  
phasing maneuver that we did that will put us 82 miles in  
front tomorrow for the rendezvous.  
SC Roger, I understand, 80 miles in front  
tomorrow.  
CAPCOM 82.  
SC 82 miles.  
CAPCOM Go ahead.  
SC You've had a report on our constellation  
(garble) already have you not?  
CAPCOM No, I've had no affirmative report.  
SC (garble) went very well.  
CAPCOM Okay, real fine  
SC These in still.  
CAPCOM Roger.  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Roger, G and N says we are getting close  
to (garble).  
SC (garble) We don't seem to be generating  
any IVA maneuvers that the spacecraft was planning to.  
CAPCOM Roger, Wally, what they were interested  
in is how Donn, doing down in the LAB with respect to work-  
ing the NAV, you any trouble for a position.  
SC At about 2 GBI's that's all.  
CAPCOM understand, 13  
SC The floor doesn't seem to hold me down  
very well and it may be because of the strip that's in the  
hose that keeps carrying me toward the other end so I'll

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 5:15:00, MC42/3

SC find out a little better I think after  
I get the suit off later, if I could do that.  
CAPCOM Okay.  
SC And the PPI 2, I gave that to you at  
4:40 and it was 165.  
CAPCOM Roger, we copied that. What about the  
PPA bias check.  
SC We stopped that when we took your  
update, we'll start another one shortly.  
CAPCOM Okay, real fine.  
SC (garble) we have finished one meal.  
CAPCOM Copy, one meal.  
CAPCOM Apollo 7, Houston, (garble). Apollo 7  
Houston we are through with the computer you can go to  
block on the uptail switch in you'd like.  
SC Roger, block.  
CAPCOM We're doing our secondary corp group  
check now.  
CAPCOM Okay.  
CAPCOM At about 30 seconds from LOS. We will  
pick you up off Ascension in about 6 minutes.  
CAPCOM Apollo 7, Houston, through Ascension  
standing by.  
SC A little fogging on the hatch window.  
CAPCOM Roger, copy.  
SC And we've taken a couple of pictures of  
it. (Garble)  
CAPCOM Okay, copy that.  
SC We've flown the secondary radiators and  
temperature came down right smartly. We've turned on the  
secondary cool lift pump it's off and the (garble) outlet  
temperature came right on down overshoot to about 35 and  
(garble) around 40, there was depressure .12.  
CAPCOM Sounds real good, Wall.  
SC Fogging on the center hatch windows  
(garble) temperature is staying about, oh, call it 55 make  
it 65 and the dry pole (garble) temperature climbed right  
on up to oh, 58 something like that. Makes me wonder about  
the (garble) working.  
CAPCOM All right.  
CAPCOM Apollo 7, Houston, about 40 seconds to  
LOS Ascension.

END OF TAPE

APOLLO 7 MISSION COMMENTARY 10/11/68 CST 1725 MC43/1

CAPCOM Apollo 7 Houston through Tananarive  
CAPCOM This is Apollo Control Houston, 5 hours  
6 minutes into the flight. The flight director suspects  
the crew is involved with other matters and has decided we  
will not attempt to contact them by voice communications  
which have not been the best through Tananarive today at  
this point. We are on the fourth revolution around the  
Earth and all events proceeding very well at this time.  
This is Apollo Control Houston.

END OF TAPE

HANEY This is Apollo Control Houston, 5 hours, 49 minutes into the flight. Spacecraft is nearing the Guam zone of acquisition, the Guam Station to contact Apollo 7 for the first time today. Before we reach Guam let's unload about two to three minutes of tape which we collected during a swing over - a swing which took the spacecraft several hundred miles northwest of Australia. This from Carnarvon.

CAPCOM Apollo 7 Houston through Carnarvon.

SC Roger, loud and clear

CAPCOM Roger, loud and clear, also. Seven when you went over the hill we found your secondary cooling loop was working working satisfactory and everything looked good on the primary loop also.

SC Roger, we concur.

CAPCOM Okay

SC (garbled) the secondary radiator again we should not have to pull it again for the rest of the flight. The egress began to come when the check was completed satisfactorily - I still feel like its part of the anomalous behaviour there on the boosting valve possibly on the primary loop. The back-off (garbled) temperature was running at 58 when I turned off the evaporator.

CAPCOM Roger, copy, Wall. COM here is shaking his head.

SC Rog, we did check the back-off aft temp end valve, the cooling control panel and it was at mid heat so there's not much more that can be done there.

CRO Roger, Apollo 7 Houston.

CAPCOM Walt, we just want to talk over on that primary loop. Was the primary loop running when you read the 58 degrees, was it in operation when you read an EVAP out of 58 degrees?

SC When I first read it, it was not pumping but then it was still within 58 till I turned the evaporator on. There was a great deal of time there between when I turned the pumps back on on the primary loop and when to evap so maybe its just didn't get a chance to settle down.

CAPCOM That might be. Okay. Your primary loop is working okay now Wall?

SC At the present its working very fine since lift-off I would - I estimate we've been boiling to some extent most of the time.

CAPCOM Okay

SC We ran through urine dump operations twice and seems to be dumping fine so far.

CAPCOM Okay, real fine.

APOLLO 7 MISSION COMMENTARY 10/11/68 5:49:00 GET MC44/2

SC Jack, this is Donn, I completed that alignment at the beginning of this pass I used Navi and Alpheratz and we had five balls on the star difference and I went through the define line just to be sure. On the course of a line we had about half a degree and two and a half degrees on the gyro torque and angle.

CAPCOM Okay, copy, Doc.

SC Do you want to go ahead with the hydrogen perch, Chuck, heat is coming out at five fifty.

CAPCOM Rog.

HANEY And now we're talking to Apollo 7 through Guam and here's how that's going.

CAPCOM Apollo 7 Houston through Guam.

SC Roger (garbled)

CAPCOM You're 5 by

HANEY This is Apollo Control Houston apparently there will be no further calm by Guam so we'll take the circuit down at this time.

END OF TAPE

HANEY This is Apollo Control, Houston, 6 hours, 5 minutes into the flight of Apollo 7. We are talking to Apollo 7 through Hawaii and here is how it's going.

SC Roger at 6 hours, 7 minutes into the mission took from measuring LM frames 53 to 54 of a tropical storm.

HAW Roger, we copy.

CAPCOM Apollo 7, Houston.

SC Houston, Apollo 7.

CAPCOM Right, Walt, we'll can turn about that 024 high, have you still got it, and if so are you turning it through the malfunction procedure.

SC That's affirmative and on page 52, box 32 here. The camera seems to be fairly high, holding fine it's normal. I have switched to redundant, set the continuator with no effect and I have cycled several times each water accumulator ON and OFF.

CAPCOM Roger, will copy.

SC This is Apollo mission.

CAPCOM Cap Com, Houston, are you calling?

HAW Apollo, are you calling?

SC Yes, I am.

CAPCOM Houston, Apollo 7, go ahead.

SC Roger, Houston. Can you hear it good?

CAPCOM Stand by.

SC 34.70 degrees and that was 22 seconds late. That was 06 hours, 10 minutes, 22 seconds.

CAPCOM Okay at the Houston Apollo. Apollo 7, this is Houston. Your rolling over the Huntsville now, Wally do you read? And the voice - the voice data is coming at very normal. We'll fix you up loud and clear over California in just about a minute.

HANEY This is Apollo Control, Houston, we're - obviously we and the crew are looking at the O2 flow. It's in a high mode. And as Walt Cunningham said he can't explain it just yet. We expect to have new contact with the spacecraft via California momentarily. We'll come back to you when we get that. At 6 hours and 13 minutes into the flight this is Apollo Control, Houston.

END OF TAPE

HANEY This is Apollo Control Houston. 6 hours 22 minutes into the flight. We still don't have a good explanation for the fact that we are using oxygen in the high-flow rate position in the cabin. Walt Cunningham - that sort of system falls in purvue of Walt Cunningham over in the right couch. He is working the problem, looking over his checklist and we are working it down here on the ground. There is some belief that it might be a sensor or a faulty sensor and I guess really that is the only possible thing I have heard rumored about. Again, we have no explanation for it at this time. We are watching it. We have some tape from the start of the pass as we move down and across the California - Baja California and down through Mexico. Here is that tape now.

CAPCOM Roger, Apollo 7. We show it holding also. Not increasing.

SC Thank you.

CAPCOM Apollo 7, Houston.

SC Go ahead, Houston.

CAPCOM Roger. You were kind of garbled over Hunstville, Wally and you were trying to read down to bay retro check. Did ... go okay.

SC Negative.

CAPCOM Roger.

SC Wrong call outs on time.

CAPCOM Okay.

SC That is 6 hours 10 minutes and 22 seconds. Was the bottom of the lines on the earth's rim. And with the call outs instead of 31.7 also. Matched up perfectly. Said 134.7 degrees in pitch.

CAPCOM Okay.

SC Like to re-validate that time.

CAPCOM Okay. We got that data.

SC Roger. It is flush from 3 degrees, but we should do better.

CAPCOM Instead of 138.

SC Say again.

CAPCOM I am sorry, Wally. That was my error.

SC Roger. What's with the end of 8?

CAPCOM Well, we read you up 138. We are just going through it now, trying to find out what the difference is.

SC 3.3 degrees.

SC Houston, Apollo 7. Any ideas on the O2 flow high? We are still bleeding the cabin out. It doesn't seem like that could possibly account for that much, but that is the only leak we can account for.

CAPCOM Walt, we are still going through it.

CAPCOM Right now, we are kind of thinking it is a sensor failure. We will take a look at it a little bit further as we go along and let you know.

SC (Garble) ...

HANEY And this is Apollo Control Houston. We are looking at the overall oxygen quantities here naturally, and looking at this oxygen flow, and we show something like 97 percent -- Here is Jack Swigert talking to the crew.

SWIGERT (garble) manual retro attitude, the one you are going to do at 6 plus 50.

SC Roger. Go ahead.

SWIGERT Okay, it is pitch attitude. Pitch attitude should be 339 and yaw attitude should be 000.5.

HANEY This is Apollo Control Houston at 6 hours 27 minutes into the flight. The spacecraft just starting its 5th revolution around the earth. It is now crossing the 80th parallel just north of the Panama Isthmus. And in case you missed that last transmission from Swigert, we have considered the oxygen high flow question that has come up since - oh - been looking at it for about the last 10 or 15 minutes since just before the spacecraft was acquired by Hawaii. And we have looked at total usage. We have looked at the cabin pressure and the fact that it is holding at a very steady 5 - 5 pounds to 5.1 pounds per square inch and we are looking at the total quantity and at least at this time we are satisfied that it is simply a sensor error. It is an invalid reading and of course we will continue to look at it, but over that period of time we could see something that would explain a leak or something else. And the data does not show that. The crew, I believe has - we have loss of signal and so that will conclude this message at 6 hours and 29 minutes into the flight.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 06:49:20 47/1

HANEY This is Apollo Control, Houston, 6 hours, 49 minutes into the flight. We had a little, very small audible communication through Ascension a few minutes ago. Here is how that went.

CAPCOM Apollo 7, Houston through Ascension.  
Apollo 7, Houston.

SC Go ahead, Houston.

CAPCOM Roger, Wally, we're still showing a good cabin, and everything seems to be holding fine on the ECS then.

SC Looking good.

CAPCOM Your about 1 minute LOS - a minute LOS, Ascension. will pick you up at Tananarive.

SC Roger.

SC Houston, Apollo 7, over.

CAPCOM Apollo 7, go ahead.

SC (garbled)

CAPCOM Apollo, would you repeat, you're garbled.

SC Requesting portable amp update first chance you get, please, over.

CAPCOM Roger, will do.

HANEY And this is Apollo Control, Houston. At this point Flight Director Glynn Lunney is talking with his various flight directors and asking them to consider very well the performance in their areas of speciality up to this point. Within about 30 minutes when the spacecraft reaches the tracking ship, Mercury, which is parked off the China coast. At that point the flight plan calls for Lunney to give the crew a GO for 18 dash 1. And before he does that, in the act of consideration, he wants to carefully weigh all of the up rating situations up to this point which of course have been quite favorable. But at the same time they'll get a very careful screening before that GO is given. The Mercury station should - the Mercury ship is to acquire at 7 hours, 22 minutes into the flight. We are presently 6 hours and 51 minutes. This is Apollo Control, Houston.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 7:03:40, MC48/1

HANEY And this Apollo control, Houston, 7  
hours 03 minutes into the flight. Via Tananerive we've  
been talking to the crew and here's how that goes.  
CAPCOM Apollo 7, Houston, through Tananerive.  
SC Houston, do you read, Apollo 7.  
CAPCOM I read you (gargle).  
SC (gargle) check we are right on -  
earth limb - low as 2.8 degrees (gargle) during that check  
(gargle).  
CAPCOM Apollo 7, Houston, you faded on that  
last one as - after the comment about the COS.  
CAPCOM Tananerive, iminole this is Houston  
Cap Com are we getting through to them.  
CAPCOM Apollo 7, Houston. - Apollo 7 Houston.  
CAPCOM Tananerive, iminole this is Houston  
Cap Com. How do you read?  
SC Houston, Apollo 7.  
CAPCOM Apollo 7, we read you fine by now.  
SC Roger, it's through the momentary  
(gargle).  
CAPCOM Roger, I understand you're making a  
fuel fill first.  
SC (gargle).  
CAPCOM I didn't get it Walt, say again.  
SP Driving (gargle) a fuel cell carriage  
(gargle) one and hydrogen (gargle) two and fuel cell three  
to follow.  
CAPCOM Roger, copy. I can give you an update  
on your orbital map here.  
SC Roger, standing by, go ahead.  
CAPCOM Okay, for rev 5, the node - the time of  
the node will be 07 plus 17 plus 38. Go on to two to the  
node will be 106.5 degrees east.  
SC Roger, 106.5 east and 17 plus 38.  
CAPCOM Rog, and the right ascension will be  
06 plus 49.  
SC Say again.  
CAPCOM The right ascension will be 06 plus 49.  
SC 06 plus 49.  
CAPCOM Okay and 7 - Wally you faded out on  
when you were describing the night retro check, we didn't  
get your comments on the COAX.  
SC Roger, I set the COAX for 31.7 degrees.  
There was more readily usable than the window line during  
retro.  
CAPCOM Okay, Roger, Okay, real good. Was the  
basic data correlated pretty well for the night retro,  
Wally.

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 7:03:40, MC48/2

SC (garble), real good on the earth horizon.

CAPCOM Okay, that's what we're shooting for, we'll talk to you over Guam about the day retro check and the discrepancy there.

SC Roger.

CAPCOM And Apollo 7, we plan to do that duplex V check just as we start Guam there.

SC Roger.

CAPCOM Apollo 7, your one minute to LOS Tantanarive. Pick you up in Mercury in about 18 minutes.

SC Roger.

END OF TAPE

HANEY This is Apollo Control, Houston, 7 hours, 22 minutes into the flight. In a very few seconds the ship, Mercury, parked off the coast of China should acquire the spacecraft now. The acquisition is planned for right now. As a matter of fact, and when it comes we'll cut into it. There will be discussion with the crew over how or what their status is and discussion of the events over the next few hours. Here is that discussion now.

CAPCOM How is the spacecraft system status?

SC Oh, we are in pretty good shape. We detected a continual yaw which we suspected before we started to fly. I'll give you some data on that. The control mode is SCS attitude hold backstead bend high rate limit shackle is ON. At 7 hours, 17 minutes, and 3 seconds your hours plus 007.10. At 17 hours, 18 minutes, and 5/6th seconds your hours plus 007.82 and it shackles back and forth between those kind of numbers at that rate.

CAPCOM Okay, we copy.

SC We are knocking (garble) on the flush yaw side of the deadband.

CAPCOM All right.

SC The other systems are better with the exception of the. (Garble) Well we seem to have the 02 line come off the peg. Must have a stuck valve.

CAPCOM Did you use the BARDOL procedure?

SC We used BARDOL procedures but that was like an hour ago. (garble) auto 1 the flow meter looks sluggish and it is reading about .75 about .8. The light is out. It is decreasing it must be a winner.

CAPCOM Do you have any other systems problems?

SC Donn solved his urine dump system problem.

CAPCOM All right, copy. That sounds like a personal problem.

SC (garble)

CAPCOM Does the spacecraft look good for about 18 revs?

SC 18 revs a day

CAPCOM Okay

SC We're ready to move to fast time right now. How about going back to MSL and starting over tomorrow.

CAPCOM Apollo 7, Houston you are GO for 18-1.

SC that suits us.

CAPCOM Real fine. Tom has a question here for you. Okay, here Wally just want to act out here real fast on that one retro check. The night retro check came out real good and the retro guy wants to ask you one question

CAPCOM here. On a daylight check when you came up to 6 hours and 10 minutes, you read 134.7 at that time?

SC That is affirmative. We were 27 seconds late with the check because we were so far off and I was trying to bring it in.

CAPCOM Okay, we'll produce and have that because they can account for a 1.4 difference and it looks like what they would like to do down the road some time is run another one.

SC Okay, we will do a little more homework on it and use the fuel.

CAPCOM Okay

SC (garble)

CAPCOM Say again, Wally.

SC Those are kind of expensive to use as fuel.

CAPCOM Yes, We agree completely and since the night check came out good, we can account for half of that difference due to a vector.

SC Apollo 7 (garble)

CAPCOM Apollo 7, Houston. We would like to shift over to duplex B for a radio check. Okay opposite on me on (garble) first.

HANEY This is Apollo Control in Houston, 7 hours 27 minutes into the flight and to repeat. Flight Director, Glenn Luney has given Apollo 7 a GO for 18-1, a GO for 18-1 and we will go back and try for any additional commentary coming to us by Guam.

GWM 5 by 5. Do you read me 2 plus B.

CAPCOM 5 by. Stand by 1

Okay, Apollo 7 you can go back simplex A. The voice check was real good.

SC Apollo 7, simplex A. How do you read me?

CAPCOM You're 5 by.

SC 5 by here.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 7:32:00 50/1

HANEY ...18-1. That was a sign that the crew could proceed to remove their space suits. We have had no positive confirmation that they have started that step yet. But it was - it is an understanding and it is written into their flight plan and ours that the suits would start coming off at this point. This is Apollo Control in Houston.

END OF TAPE

APOLLO 7 MISSION COMMENTARY 10/11/68 7:39:45 GET MC51/1

RILEY This is Apollo Control, 7 hours and 39 minutes into the mission. We're just about ready to acquire Apollo 7 at Hawaii Station. We'll stand by for that pass and Seven will go on down through the Huntsville's acquisition area. Here's the call now

CAPCOM ... You had a restart, do you have your restart lights on your computer?

SC (garbled)

CAPCOM Okay, you're kinda garbled, I understand you did have one to reach that other thing. Looks like all the (garble) is real fine.

SC (garbled)

RILEY Apollo Control, 7 hours and 45 minutes we have LOS at Hawaii and we'll continue the monitor through to Huntsville. Hello Apollo 7 Houston.

SC Roger, Tom, go ahead.

RILEY Okay, got good comm with you now, Wally, just wanted to recheck on the computer. Now when you did - did you get the alarm light at the same time that the restart - that the program alarm at the same time that the restart came on?

SC Yes sir, we've wrote that off as no problem sir.

RILEY Okay, but you did get a restart and a program alarm at about the same time?

SC That's confirmed, that was due to the zero optics, they slow up too fast.

RILEY Okay. I don't want to - we starting to track the S-IVB and it's not separating as fast as they anticipated. It will still take a while to track it out and then we'll have plenty of time on it.

SC Okay

RILEY This is Apollo Control Houston at 7 hours, 54 minutes into the flight. Apparently, we will have no more comm through Guaymas. The spacecraft will be proceeding down the Eastern Pacific.

END OF TAPE

RILEY This is Apollo Control, Houston, 7 hours, 54 minutes into the flight. Apparently we will have no more come through Guaymas. The spacecraft will be proceeding down Eastern Pacific running parallel to the Mexican, Central American area without any further contact. I want to emphasize in that last message the statement that the separation distance between the Command Module and the S-IVB is not running exactly according to the earlier prediction. You recall about an hour, an hour and a half ago, we told you that the two were about 15 miles apart. The Command Module in front and slightly below the S-IVB. And the prediction the Flight Dynamics Officer gave us then was that they would continue to separate at the rate of 4 or 5 miles per hour for a period of 7 or 8 hours, and perhaps reach a maximum separation point of about 100 miles before they would slowly come back together. Now that separation rate is not preceeding according to the reference prediction. We have no new numbers on just how it is proceeding, but they think we can get some together before the news conference which will follow this shift. This is Apollo Control, Houston at 7 hours, 56 minutes into flight.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 8:10:03, MC53/1

RILEY Apollo control, Houston, 8 hours 10 minutes. The second shift of flight controllers is now active in the mission control center, headed by flight director Gene Kranz. The Cap Com on this ship is astronaut - well Tom Stafford is still here, but astronaut Ron Evans has just come in to and will fill out the rest of this shift. We are estimating the new conference now with flight director Gene - with flight director Glynn Lunney of the first shift for 6:30 pm Central Daylight Time. Apollo control 8 hours 10 minutes.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 8:31:40, MC54/1

RILEY                    Apollo control, Houston 8 hours 31 minutes. We're coming up on the Tananarive station now, but we do not intend to initiate any communication with the spacecraft at Tananarive. We will stand by in case the flight crew wants to talk, but the control center will initiate communication during the pass. We're over the Pretoria, South African station, but there's no voice capability at Pretoria. If there is any communication at Tananarive we will bring it to you. Apollo control.

END OF TAPE

RILEY 9 hours and 31 minutes into the mission. Apollo 7 is on it's sixth revolution down over the Eastern Pacific. We did have a brief bit of communication earlier in this revolution at Tananarive, and at the tracking ship Mercury Walt Cunningham reported that the Command Module Pilot, Donn Eisele was settling down for his sleep period. And then over the Hawaii station which we just passed, the Flight Surgeons were successful in passing up some corrective measures for Cunningham to take to fix his EKG instrumentation. We'll bring you the tapes from those passes now.

CAPCOM Apollo 7, this is Houston through Tananarive.

SC Go ahead.

CAPCOM Roger, we'll be standing by here (garble) predicted the next flight being that will be required some time after 40 hours.

SC Roger, we'll stand by for ref C, and since confession is good for the soul, we got our curfews ran a little bit of 3 minutes last time.

CAPCOM No problem.

CAPCOM Apollo 7, we want to log (garbled) 3 hours and 35 minutes into the flight.

CAPCOM Apollo 7, Houston.

SC We're using you through Malagasy whenever we have our CSD out of commission as temporary.

CAPCOM Okay.

SC Houston, this is Apollo 7, have you got the good team on yet.

CAPCOM Apollo 7, say again.

SC Sounds like you've got the good team working there.

CAPCOM Yeh, at the press.

SC Hope you had a nice trip back to Houston.

CAPCOM We had a beautiful trip. I tried to contact you but no go.

SC Understand that.

CAPCOM Apollo 7, Houston, we have 1 minute til LOS at Tananarive.

SC Roger.

CAPCOM Apollo 7, Houston, through Mercury, how do you read? - Apollo 7, Houston, through Mercury.

SC Roger Houston, go ahead.

CAPCOM Roger, you're coming in loud and clear. Just wanted to check, do you got all the basic stowage cleared away Walt.

SC Seems like we have. We're up to that

stage in the flight plan here where we kind of collect our (garbled). Donn is attempting to settle down for a long winter's night.

CAPCOM Okay, thank you.

CAPCOM Apollo 7, Houston opposite (garbled).

SC Roger, out of (garbled), but I shot a better lock up on - on the area which I had before. It's backup now. I still have the 02 flow high light. We'll occasionally add the flow meter come on down to around .8, but it's a very sluggish movement. I would appreciate it if as soon as you get any kind of trend data on the option quiry you'll let know and it'll really confirm the trans-fusion problem. - Houston, this is 7, over.

CAPCOM Houston, go.

SC We have locked the onboard through REV 8, and we'll be standing for further update on block data and (garbled)

CAPCOM Houston, roger. Apollo 7, this is Houston, let's try opposite on again.

SC This one looks a little better to me, but not too good. I'm going to try inbetween if it lie back and kind of tell here on the distinguish tape meter. It's negative. An IVA seems to be best from here.

CAPCOM Roger, 30 seconds to LOS and okay on the IVA.

CAPCOM Apollo 7, Houston from Hawaii, over.

SC Roger, reading you fine.

CAPCOM Roger, good news tonight. No EKG on a CMP or LMP.

SC (garbled) I'll tell the CMP you asked.

CAPCOM Since the CMP is asleep don't bother him, but we've got some check we want the LMP to do.

SC This is the LMP go on the checks.

CAPCOM Roger. Check that that sensor goes into the lower end of your breast bone there right in your chest is plugged in the line. Check that the sensor, the external sensor is plugged into the box and is tight. And then when your done with all that, if it doesn't make up check that the sensor is strapped to the body. And

SC I found one that was loose, it was the upper one, the upper strap.

CAPCOM Roger.

SC How are you reading me now?

CAPCOM Loud and clear.

SC How's the EKG on me?

CAPCOM Nothing yet.  
 CAPCOM That's it.  
 CAPCOM That fixed it LMP.  
 SC (garbled)  
 CAPCOM (garbled)  
 CAPCOM Apollo 7, Houston, I have a block data  
 on number 2 to give you. Apollo 7, Houston.  
 SC Go.  
 CAPCOM Roger, both last two stations confirm  
 that you have been transmitting on both complex A and B.  
 Do you concur?  
 SC (garbled) we're now on complex A.  
 CAPCOM Roger. We're about 1 minute to LOS. I'll  
 have your block data for your over Tananarive if the voice  
 is good, otherwise it'll run.  
 SC Roger, we'll be standing by.  
 SC Apollo 7 to Houston.  
 CAPCOM Huntsville (garbled) Houston Cap Com.  
 CAPCOM Apollo 7, Houston.  
 CAPCOM Huntsville (garbled) Houston to contact.  
 CAP COM Houston to contact GO.  
 CAPCOM Roger, are you reading Apollo 7.  
 CAPCOM We presently have two in S-band, we're  
 reading you going up. No signal coming back.  
 CAPCOM Apollo 7, Houston, 1 minute to LOS in  
 flight up telemetry command switch to reset in release.  
 SC Roger, are you reading the S-band as  
 real low, and say again after LOS?  
 CAPCOM Roger. Up telemetry command switch to  
 reset. Apollo 7, Houston, return the up telemetry command  
 switch to normal.  
 SC You're coming in way down in the mud.  
 Do you want the up telemetry?  
 RILEY Apollo Control, Houston, 9 hours, 42 min-  
 utes. That's the end of the tape, the Cap Com you heard  
 talking to flight crew through Hawaii was Astronaut John  
 Young who a member of the backup crew who has joined the  
 Astronaut Ron Evans at the Cap Com console here in the  
 Mission Control Center. Apollo 7's next station contact  
 will be Tananarive at 10 hours, 7 minutes, 30 seconds elapse  
 time. Apollo Control.

END OF TAPE

APOLLO 7 MISSION COMMENTARY 10/11/68 10:07:30 GET MC56/1

RILEY This is Apollo Control at 10 hours and 7 minutes elapsed time, we coming in to acquisition at Tananarive now. We'll stand by live through this pass.

CAPCOM Apollo 7 Houston - Apollo 7 Houston.

SC Go ahead, Houston

CAPCOM Roger, you sound pretty good this time.

SC Roger, we're (garbled) the cannister at this time.

CAPCOM Roger

SC Houston, this is Apollo 7 again, well about 25 minutes ago, I guess we noticed the glycol and the temperature was climbing up to about 50 and the steam pressure was tagged low and the best we can find out, above 60 we went to manual and increased for 45 seconds and we started to activate the secondary loop, before we got the secondary loop completely activated, in about 10 or 12 minutes the temperature started down again and there was no activity for a couple of minutes, but it looks like the water boiler couch just might have frozen and now it seems to be controlling fine and back in order.

CAPCOM Apollo 7 Houston, we copy.

SC Roger, I am in the midst of changing the lithium hydroxide cannister, would you verify it for me from the EPS people how long this button shaft has to be depressed preventing the cannister we've prepared from opening. It seems to be on a continual basis.

CAPCOM Roger, stand by - you don't even need to depress a button there, Wall - Apollo 7 Houston, just a momentary depress on that cannister.

SC Roger, understood, but I think it must be for one calibration, it works all right now.

CAPCOM Wall, we would like to verify that you reset your telemetry command switch and it went back to normal.

SC Roger

CAPCOM Apollo 7 Houston requests a partial pressure 02 reading.

SC Advise. - This is Apollo 7, we took and changed the cannister out of the a side (garble) on the ground they inadvertantly placed cannister two, I switched cannister two down beside B and moved cannister one and cannister two is now ...

END OF TAPE

SC and canister 2 now...

CAPCOM Apollo 7, Houston. That is Roger.  
RILEY This is Apollo Control. We have had  
loss of signal at Tananarive now. As you heard, this is  
the first change of lythium hydroxide canister. There are  
two canisters in the system that they are using to remove  
the carbon dioxide from the re-circulated oxygen. One  
canister is changed every 12 hours. This was the first  
change right on schedule according to the flight plan.  
The next station to acquire will be the tracking ship  
MERCURY down off the coast of Japan, down between Japan  
and the Phillipines. Acquisition time there at 10 hours  
30 minutes 40 seconds. This is Apollo Control at 10 hours  
16 minutes.

END OF TAPE

RILEY This is Apollo Control 10 hours, 30 minutes into the mission. Apollo 7 is coming up on the tracking ship, Mercury. Should acquire within a few seconds. It is in its seventh revolution. We'll monitor communications through this pass.

CAPCOM Apollo 7, Houston through Mercury. This is Apollo 7, Houston.

SC Go ahead

CAPCOM Roger, we need your partial pressure 02 reading (garble) in now so your status of the waste management overboard drain valve.

SC Have you got the (garble) reading as 190 when you requested it at 10:15

CAPCOM Say again the reading, I missed it.

SC One niner zero.

CAPCOM Roger, go ahead and close the waste management overboard drain valve. (garble). The one you already closed at 10:15

SC (garble)

CAPCOM Apollo 7, Houston, I've got some block data to give you

SC (garble)

CAPCOM Roger, Block data number 2 009-3 Bravo plus 254 plus 1367 a 013 plus 2 niner plus 36. 5150, 010 alpha Charlie minus 054 minus 0162, 014 plus 1 niner plus 12 4314, 011 Alpha Charlie plus 060 minus 0220, 015 plus 54 plus 48, 4131, 012 Alpha Charlie plus 134 minus 0330, 017 plus 28 plus 48, 4098, 013 2 Alpha plus 262 minus 0282 019 plus 08 plus 06, 4258, 0141 Bravo plus 220 minus 0620, 020 plus 34 plus 03, 4163. Houston, over.

SC Partial readback. 0093 Bravo plus 254 plus 1367, 013 plus 2936, 5150, 010 alpha Charlie minus 054 minus 0162, 014 plus 19 plus 12, 4314, 024, 011 Alpha Charlie plus 060 minus 0220, 0155448, 4131, 012 Alpha Charlie plus 134 minus 0330, 01728484098, 0132 Alpha plus 262 minus 0282 0190806, 4258, 0241 Bravo plus 220 minus 0

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 10:39:54 59/1

SC 0190806, 4258, 0141 Bravo plus 220 minus  
062002034034163 over.

CAPCOM Roger, Wally. Readback is correct.  
Break when we get over Hawaii we are going to want to make a  
E memory dump by burp 74. In transmit you start out with  
a clear disk, burp 74 enter and then wait one minute.

SC Houston, Apollo 7, I would like to log  
10 plus 35. I had 11 squirts on this water pistol and I  
would like to log that the beef stew might tend to be very  
crumbly and a lot of crumbs when you open the package even.  
Pretty crumbly food. Top of the crumbly (garble)

RILEY This is Mission Control we have had LOS  
at the Mercury now. You heard Wally Schirra report the  
partial pressure of oxygen in the cabin as now 190 millimeters  
of mercury and that is the magic number they have been look-  
ing for. That is the sea level equivalent. When they  
reached that number, they closed the waste management vent  
valve which is the valve which has been venting the atmos-  
phere introduced to the cabin on the pad the 60 40 oxygen  
nitrogen combination. So that valve is closed now. They are  
not venting and they do have a sea level in the cabin as far  
as partial pressure of oxygen. At 10 hours, we'll acquire  
again in Hawaii in about 8 minutes specifically 10 hours,  
48 minutes and this is Mission Control at 10 hours, 39 min-  
utes

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 10:48:00, MC60/1

RILEY This is Apollo control, 10 hours 48 minutes into the mission. Apollo 7 coming up on acquisition of Hawaii tracking station now. We'll stand by through this pass.

CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Rog, Wally at this time we would like to try duplex A and notify when switching to a duplex A.  
SC Garble.  
CAPCOM Roger, duplex A, now.  
SC Houston, Apollo 7, how do you read (garble).

CAPCOM Apollo 7, Houston. A little more garble than the other, but still about 4 by 5.  
SC Roger, (garble).  
CAPCOM Roger, let me check and make sure we're receiving down link and we can proceed with our blurb 74.  
SC Roger, do you want me to remain (garble).

CAPCOM Affirmative, we will stay duplex A until we get close to LOS and if we haven't the method return to simplex A at LOS.

SC Wilco and (garble).  
CAPCOM It's a negative, you want to make sure the deck is clear and it looks like it is. It (garble) 74 and inner and then we will wait one minute.  
SC Standing by on your mark.  
CAPCOM Apollo 7, Houston, proceed, blurb 74.  
SC (garble)  
CAPCOM Roger, the inner phase. Wally you can go ahead and make the entry from on board we're not going to send it to you.

CAPCOM Apollo 7, Houston, request you to enter blurb 74.

CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Request you enter a verb 74.  
SC Yes.  
CAPCOM Apollo 7, Houston.  
SC Yes.

CAPCOM It looks like the E memory dump is good. We would like to verify the position of the water flow now that panel two is in the auto position. That's the glycol evaporator water flow.

SC (garble)

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 10:55:00 61/1

SC Houston, the set is affirmative. The engine is auto; the G-pressure is auto, the water pump is auto.

CAPCOM Houston, roger.

SC We just go the same thing again. Pressure normal (garbled).

CAPCOM Apollo 7, Houston. Return to complex A and about 1 minute to analyze it.

SC Roger, (garbled)

RILEY This is Mission Control, 10 hours, 56 minutes. We've had LOS since Hawaii. The next station acquires tracking ship Redstone, be a very low elevation pass there. We think we will be able to have voice communications. But the elevation is just slightly over 3 degrees and it'll be a short pass. This operation with the computer during the Hawaii pas was to check the memory after the restart that the computer saw several hours ago. Flight controllers here wanted to double check to make sure that the memory had not been effected, and it appears to be very good at this time. At 10 hours, 57 minutes this is Apollo Control.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 11:06:00, MC62/1

RILEY This is Apollo control, 11 hours 5 minutes - we're coming up on the Redstone now. We'll stand by through that pass.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston.

SC Houston, Apollo 7, do you read.

CAPCOM Houston, affirmative, read you.

SC Roger, I'm reading you very weak, it seems we've been running into a lot of passes here where between passes we're left without a tape recorder running and we don't quite know the status of it when we are left that way, we would like to be using it to record some of these problems. I assume you're observing the anomaly we've got steep pressure now I'm going to reservice the water boiler.

CAPCOM Roger, I understand, you're servicing the water boiler.

RILEY This is Apollo control, 11 hours 10 minutes, we've had LOS with the Redstone. We're along way from the next acquisition we're in the revolutions that go down over the southern hemisphere and the next station to acquire will be the tracking ship Mercury at 12 hours 5 minutes 58 seconds. This is Apollo control at 11 hours 11 minutes 20 seconds.

END OF TAPE

RILEY                      This is Apollo Control, 11 hours, 43 minutes into the mission. At the last pass of Apollo 7 over a tracking station in this case the Redstone, a tracking ship, Walt Cunningham mentioned a steam pressure anomaly. Flight Director Gene Kranz and some of his flight controllers have been working this problem. They think that we're seeing a freeze up of the water boiler on the primary coolant loop of the spacecraft. The spacecraft is powered down considerably and on the night side of the pass the water boiler does not have to work. But as we come into daylight and heat up, water then does flow to the boilers so that it can get rid of heat by evaporating water, that's what the water boiler does, and then when we go back into the night side in a low power configuration, it's the belief we may be getting a freeze up. There's water still in the boiler and may be freezing up. We're going to get a data dump at the next pass over the Redstone. We have a pass over the Mercury coming up at 12 hours 5 minutes elapsed time, but the Mercury has a problem with their unified S-band antenna which won't allow us to get a data dump there so we'll wait until the Redstone, get a data dump which will give us a better understanding of this problem. At the present time, it appears though to be a freeze up of the water boiler as it goes into the night side. At 11 hours 45 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 12:05:30, MC64/1

RILEY This is Apollo control at 12 hours 5 minutes into the mission. Apollo 7 is coming up in to range of the tracking ship Mercury on its eighth revolution. we'll monitor communications through this pass.

CAPCOM Apollo 7, Houston, AOS Mercury.

SC Roger. This is Apollo 7, we temporarily had our primary loop back working on the line. It is beginning to look like near the primary water flow valve, for a while we thought it was flux shutdown. I'm wondering if we start playing with it, we will eventually get it to come back up with the steam pressure reading normal for a while and it was controlling around a temperature of about 40 c's. Right now we are pegged low again. It looks like it is possibly the water control section or the 240 controller.

CAPCOM Walt, say again your last sentence there. It looks like what?

SC I believe it is probably getting down to the water control section or the 240 controller. Also, we have a (garble) accomplish here. The cryo stratification for hydrogen. It is - both tanks are within 90 plus or minus 5 percent of my hydrogen and the procedure calls to let the pressure rise to about 260 to 265 and I believe that is the spec number and I would like the ECOM to tell me how high these pressures have been rising before they - the heaters shut off so I will know where to start doing the DT over.

CAPCOM Roger. Standby. We will get it for you.

SC More specifically, I need the deadband that the hydrogen pressure tank 1 and tank 2 have been running back and forth between.

CAPCOM Roger.

SC Tell Wally we just took a couple more pictures of his mountains to update them.

CAPCOM Roger.

SC And we have been showing data on that tape and I hope we can get something worked out on that - the tape dumps because we're terribly handicapped if we don't have the tape available for log run.

CAPCOM Roger. We concur and I think we're back in cycle now.

SC Okay, understand. It would be nice if you know that we are going to be going over the horizon without the tape in a record mode for us, let us know.

CAPCOM Roger. What it amounts to on these night passes are night time here, if it were down just to about 1 site per rev to dump it and the Mercury had a band of down right now.

SC Roger.

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 12:05:30 MC64/2

SC We only have two stars available for  
the 252 alignment.  
CAPCOM Roger. We will have it shortly.  
SC Air frame six and magazine Bravo.  
Correction magazine Peter. ...  
CAPCOM I missed that, Wally. Say again.  
SC Roger. (Garble) I would estimate that  
he is a coolie.  
CAPCOM Ah so.  
SC Ron, do you have someone working with  
two stars?  
CAPCOM Wait one. I think... what to do, don't  
we just pick a pair out of the CMP?  
SC Roger. We will go ahead like that.  
CAPCOM Roger.  
SC Anyone come up with any suggestions on  
our ECS problem? The malfunction procedures call for  
activating the secondary loop whenever the primary radiator  
outlet temperature gets above 48. I have been resisting  
doing that and kind of going by the glycol evap temp. Right  
now I am reading almost - radiator outlet temperature now  
- my glycol evap outlet temp is on about 52.

END OF TAPE

SC ...in fact, I'm reading over the radiator outlet temperature now but like my glycol evap temp is on about 52. I would like to hold to not activating the secondary loop until the primary glycol evaporator outlet temp rates 60.

CAPCOM Apollo 7, Houston. We concur on that we kind of believe that we're really, not really hot enough and then we're starting to cool down when it starts evaporating - maybe over Houston going too cold on that thing. We're working on that right now.

SC During the night pass, the glycol evaporator outlet temperature got down as low as about 45 - something like that before we got the evaporator working again.

CAPCOM Roger.

SC Do we have anybody who can (garble) data (garble).

CAPCOM 7, Houston, LOS.

Riley This is Mission Control, 12 hours 13 minutes. We've had LOS at the Mercury. A very low elevation pass scheduled at Hawaii this rev nine-tenths of a degree which would give us - perhaps 2 minutes acquisition there and we're going to try. Apparently, we'll come back at that time. Acquisition at Hawaii scheduled at 12 hours 25 minutes 12 seconds. This is Apollo Control.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 22:21:00 66/1

RILEY This is Apollo Control, 12 hours 25 minutes into the mission. We'll stand by through this short low elevation pass at Hawaii.

CAP COM Apollo 7, Houston. I have your dead man for H1 and H2 tanks.

SC Roger, go.

CAP COM Roger. Tank 1, H2 tank 1, 228 to 246 H2 tank 2, 237 and 255.

SC Roger. 228 to 246 and 237 to 255 and I see that the pressures go slightly back and forth, ... (garble) little overheating.

CAP COM That's affirmative and the R/O auto reader and you can tell Wally that it looks like Stars 11 and 12 would be pretty good stars to try for.

SC Roger, 11 and 12, thank you. And Wally kind of wished the (garble) test after the alignment, we're still showing about 87 percent.

RILEY We've had LOS now at Hawaii. The Apollo 7 will be acquired by the Redstone at 12 hours 37 minutes 56 seconds. This is Apollo Mission Control at 12 hours 28 minutes.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68,GET: 12:37:48 67/1

Riley Apollo Control, 12 hours 37 minutes  
Apollo 7 coming up on the Redstone now. We'll monitor this  
pass.

CAPCOM Apollo 7. Apollo 7, Houston, Outfit on me.  
CAPCOM Apollo 7, Houston. Let's try the  
original (garble).

CAPCOM Apollo 7, Houston. We got (garble) dope  
on the IVB.

CAPCOM Apollo 7, Houston.  
CAPCOM Apollo 7, Houston.  
CAPCOM Apollo 7, Houston. Go ahead and try and  
(garble) and you're reading us weak. We don't read you.  
We're monitoring the relative motion of the S-IVB and the  
spacecraft. It looks like it may require another phasing  
burn at 16 to 16 and 1/2 hours. The Delta-V will probably  
be 6 to 6 and 1/2 feet per second. Over.

SC Apollo 7, I read your message but very  
weak.

CAPCOM Oh, Roger.  
SC It's lunch time at 16 hours, is that  
correct?

CAPCOM That's affirmative - about.  
SC Roger.

END OF TAPE

CAP COM Apollo 7, Houston. 30 seconds LOS.  
SC Roger, Houston, we got your message.  
...07 I've got 4 balls, one on the star data check and use  
Star no. one Alpheratz, Star no. 7 Menkar and we're going  
to go ahead and take the gyro torquing angle. Is that  
intentionally?

CAP COM Apollo 7, Houston, we'll take our angle--  
RILEY This is Mission Control. We've had LOS  
at the Redstone. During the first half of that pass we had  
very low signal strength, could not raise the spacecraft,  
finally got word through the network controller that the  
spacecraft had reported to the ship that they could read us  
very weak, so Cap Com Ron Evans started in the blind with  
that information but by that time the signal strength came  
up and we were able to get a little bit of conversation.  
The Ascension Island tracking station will acquire Apollo 7  
at 13 hours 4 minutes 41 seconds. At 12 hours 47 minutes  
this is Mission Control.

END OF TAPE

RILEY Apollo Control at 13 hours 4 minutes into the mission. The Ascension tracking station is about to acquire Apollo 7. We'll stand by through this pass.

CAP COM Apollo 7, Houston. We'd like for you to switch to simplex B on my mark.

SC Simplex.

CAP COM Apollo 7, switch to simplex B Mark.

SC Houston, Apollo 7, simplex B.

CAP COM Apollo 7, Houston, Roger. You got a lot more graph at this time on simplex B than on A.

SC Houston, you're coming in clear but you're way down. I'd say on level two compared to the other.

CAP COM Roger, and Walt we'd like to verify that the primary evaporator water control valve on panel 382 is in the AUTO position.

SC Roger. Did you read (garble) that I did for the rest of that realignment?

CAP COM I missed that say again.

SC Roger (garble) when I did the (garble) for the rest of that realignment?

CAP COM Affirmative, 3 balls one and Stars 1 7 and secondly we'd like to know what portion of the malfunction procedures that you have accomplished on the primary glycol of that ALT TEMP high?

SC Roger, I've come down to box 18 or box 21 depending on how long you (garble) or whether you take the intermediate characteristics or not. That thing stayed down for a long period of time, then it came up fairly spontaneously to extreme pressure.

CAP COM Roger, we understand.

SC and one time ended up over with the primary lever water control valve (garble) there was a possibility the evaporator was froze. I'm going to check the water control valve now.

CAP COM Roger. Can you do that without disturbing our sleeping CMP?

SC Yeah, we're doing it. I also would like to get the same pressures that the oxygen tank is controlling to the actual pressures.

CAP COM Roger. I have them if you're ready to copy.

SC Ready to copy. Go.

CAP COM O2 tank one deadband 880 to 926. O2 tank 2 870 912.

SC Rog, thank you and now if I can just collate between what these meters are reading, we'll be on that 5.8 cryogenic test.

CAP COM Roger.

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 23:07:00

69/2

SC  
CAP COM

Tandi hydrogen test is in work now.  
Roger.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 13:10:30 70/1

CAPCOM Apollo 7, Houston. 1 minute til LOS.  
Simplex A on LOS.

SC Roger.

CAPCOM And that was a good try on the evaporator water control. The evaporator water control primer is in AUTO and for your information, I'm also running with the evaporator water control secondary in auto in case I do get into a situation where I have to activate the secondary loop.

CAPCOM Roger. Understand.

SC Hey, Ron, it's not a good situation but I don't consider it any kind of real problems with that primary (garble) right now.

CAPCOM (Garble) We concur with that.

CAPCOM 7, Houston. We're just now taking a look at the dump data we picked up at Redstone.

SC (Garble)

Riley This is Mission Control. Ascension has had LOS. We'll be out of touch with Apollo 7 now until it comes within range of the Mercury tracking ship over in the Western Pacific. Over this pass over Ascension, we got a little bit more information for the environmental control officer here to work (garble) the evaporator or the water boiler problem. As you heard Walt Cunningham does not consider it a major problem at this time and the Control Center here concurs with that. They are continuing to work on the problem and are evaluating the telemetry information received in the dump over the Redstone during the last pass. We'll acquire at the Mercury at 13 hours 40 minutes 43 seconds. At 13 hours 13 minutes, this Mission Control.

END OF TAPE

RILEY Apollo control at 13 hours, 40 minutes, Apollo 7, its ninth revolution coming up on the tracking ship Mercury in the western Pacific. Guam has overlapping coverage with the Mercury on this revolution. We will stand by through both of those passes.

CAPCOM Apollo 7, Houston, thermal Mercury.

S/C Roger, loud and clear.

CAPCOM Roger. We would like to get a bird 069.1 - read out the six accounts. We would like to get your onboard readout.

SC White took the count down here. It has always been 0 for a long time. It goes about 6-X, T-1. Around 5.8 for the hydrogen, with 90 percent and it doesn't look to me like we have any clarification. The pressure slows down to a drop a little bit. I am not sure just what anoid mission is yet.

CAPCOM Walt, you are coming through HF this time, the clock there and I can't read you very well. Could you talk a little slower?

SC All right, you understand I just completed the hydrogen at 90 percent portion of the completion test and welcome there, it was my own estimation that we really didn't have any justification there.

END OF TAPE

CAP COM Apollo 7, Houston.

SC Go ahead.

CAP COM Roger. Current tracking indicates that the service module, the command service module will trail the S-IVB at NCC1 by about 30 miles so if we go ahead and do this upcoming maneuver, we will yield about nominal displacement at NCC1. The S-IVB orbit on 3rd day, however, yields a displacement between 63 and 87 miles, if we go ahead and make the burn and this is all based on that beacon tracking so it's pretty good.

SC Oh. (garble) registers 2000 (garble) let's get to it.

CAP COM Roger. We're working on the update and we'll probably give you over Redstone.

SC Okay.

CAP COM Looks like the GETI is about 15.50.

SC Okay.

RILEY Mission Control at 13 hours 54 minutes Guaymas had LOS. The tracking ship Redstone in the South Pacific will acquire Apollo 7 at 14 hours 12 minutes 38 seconds. We'll be back at that time.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 14:12:30 73/1

RILEY Apollo Control at 14 hours 12 minutes  
into the mission. The tracking ship Redstone is about to  
acquire Apollo 7. We'll stand by through this pass.  
CAP COM Apollo 7, Houston. I have your (garble)  
pad to give you. Apollo 7, Houston. Apollo 7, Houston  
opposite (garble) Apollo 7, Houston. Apollo 7, Houston.  
Apollo 7, Houston through Redstone.  
SC Roger, we read you.  
CAP COM Roger, I have a (garble) pad to give you.  
SC You're very weak but we think we can  
take it. Go ahead.  
CAP COM Roger. Phasing no. two. 015 52 0000  
NA NA NA, 1647 + 1202 00065 32445 NA NA 019 skip to roll  
pitch yaw roll 181 pitch 276 yaw 001 comment RCS/SCS BEF  
... up + X thrusters. Monitor burn with E47. Read that?  
Apollo 7, Houston, opposite ...

END OF TAPE

CAPCOM Apollo 7, Houston. Did you copy?  
 CAPCOM Apollo 7, 1 minute LOS. Ascension  
 fourteen plus three nine.  
 SC Roger, we read your old message. Did  
 you copy back?  
 CAPCOM Negative on the readback.  
 Riley This is Mission Control. We have LOS  
 at the Redstone now. During the initial part of this pass,  
 we again had a weak signal strength problem. Didn't get  
 communications with the spacecraft until several minutes into  
 the pass. We passed up the information the crew will need  
 to perform this little extra phasing maneuver that's planned  
 at 15 hours 52 minutes into the mission. It's required  
 because the drag conditions of the S-IVB, the second stage  
 of the launch vehicle are not as predicted premission and  
 without this burn at the time of the first SPS burn tomorrow  
 and that's scheduled for 26 hours and 20 minutes. That's the  
 first burn to - in the rendezvous sequence. Without this  
 (Garble) with it's coming up at the time that burn takes  
 place, the S-IVB stage would trail. Correction - the  
 command and service module would trail the S-IVB by about  
 30 miles. When what is needed is for the command and  
 service module to be out ahead of the S-IVB. The nominal  
 number is 73 miles and this second phasing maneuver coming  
 up will place the CSM out ahead between 63 and 87 miles of  
 the S-IVB which is still in good position for the MCC-1 or  
 the first SPS burn at 26 hours 20 minutes tomorrow.  
 Apollo 7 will be acquired by the Ascension station at 14  
 hours 39 minutes. This is Mission Control at 14 hours  
 24 minutes.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 14:26:00 75/1

RILEY                      This is Mission Control at 14 hours  
26 minutes. This upcoming phasing maneuver will be a burn  
of 6 and a half feet per second. Propellant cost will be  
about 27 pounds it is estimated. But even though this is  
a nonplanned burn and the flight plan, there is enough RCS  
pad in the propellant budget to handle this burn and it will  
not affect the mission. This is Mission Control.

END OF TAPE

RILEY This is Mission Control at 14 hours, 39 minutes. Ascension has acquired at the Apollo 7 spacecraft. We will stand by.

CAPCOM Apollo 7, Houston through in a second.

SC Roger, Houston. This is Apollo 7. How do you read this current?

CAPCOM Roger, will occur this time, Walt. We plan to reservice the evaporator and then shut it down.

SC 520000NA1647 + 120200065324445NA0189 181276001, and I copied all waiting line.

CAPCOM Apollo 7, Houston, say again at GTI.

SC Roger. GTI is 015520000.

CAPCOM I reckon you read that correct. All right, seven, Houston - the steps on reserving the shut-down are real good reform. Make sure you have them. Block all the bad steam. Steam practically auto to manual. It will practically increase for 45 seconds. Block all of that. Eighth fuel flow on for a few minutes and then turn.

SC Roger. You know I have only done that twice in the past. And if you notice now that D pressure is unhooked and come backup. It seems to come up whenever the glide call, the evaporator outlet temperature gets down pretty cool like during the night. Do you want me to continue? We are going to manual, increase 45 seconds and reservice the water evaporator?

CAPCOM Affirmative. We just want to reservice it now and then shut it down.

SC Roger.

CAPCOM The idea Walt is that the radiators will carry a load without the primary evaporator on the line.

SC I don't think we have any manual control over the steam pressure. I am going to service the water flowing now.

CAPCOM Roger.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 14:46:00 77/1

SC Wally seems to have a pretty bad head cold. He took two aspirins about 15 minutes ago and he has been blowing his nose.

CAPCOM Walt, say again. I missed that.

SC Wally has a pretty stuffed up head here. He took two aspirins about 15 minutes ago and has been blowing his nose pretty much all day long.

CAPCOM Roger. We understand.

SC We would like to check on (garbled)

CAPCOM About 1 minute until LOS there, Walt. We just want to make sure that you realize we are trying to shut down evaporator and we think (garbled) will carry the load.

SC Roger. See you all later.

Riley This is Mission Control. We have had LOS at Ascension. Next station to acquire will be the Mercury at 15 hours 15 minutes. The Apollo 7 at the time of this phasing maneuver at 15 hours 52 minutes will be in contact with the Redstone. At 14 hours 48 minutes, this is Mission Control.

END OF TAPE

RILEY This Apollo Control at 15 hours and 15 minutes into the mission. Apollo 7 is coming up within range of the Mercury tracking ship now. Guam again has overlapping coverage here so we'll stand by through both of these stations for any communications.

CAP COM Apollo 7, Houston. I can give you time-hack at 35 minutes prior to burn. Four, three, two, one, MARK 35 minutes.

SC That's 35 wasn't it?

CAP COM Affirmative. 35.

SC (cutting out) around (cut out) here at the evaporator and we have the steam pressure in MANUAL and the water flow OFF but that last bit of servicing I did, ah did a good bit of increase in steam pressure.

CAP COM Roger. Understand the last bit of servicing increased the steam pressure?

SC Yeah. That last two minutes brought the steam pressure up right handedly. Right now I'm reading about .20 on the steam pressure.

CAP COM Roger. Walt, we can go with that. That's okay.

SC That's good news. Yeah. Right. Is an MD there or do you still have those experimental doctors there?

CAP COM They're right here waiting.

SC You know I asked about taking a decongestion or antibiotic. (cutting out)

CAP COM Roger. Stand by. What's the word on it Wally, I'll get the word on it.

SC Didn't you get the word that Walt passed back earlier? I've taken two aspirins.

CAP COM Say again. I think that was in the garble part. Couldn't make it out. Say again the problem.

SC I have a nose cold. I've already gone through about 8 or 9 Kleenex with some pretty good blows. I've taken two aspirin and I was wondering if there was anything else I could take?

CAP COM Roger.

SC I'd like to find out your D ruthers on the water boiler after that last servicing but putting it off for a while because you know we don't really need it. I'd still sometime in the future like to try it again. I'm not sure but what it's not working right now.

CAP COM Walt, this is kind of what we expected in this condition while not running and what we'd like to do is try to rev, at least a rev anyhow, with the evap off the line.

SC Whatever you think.

END OF TAPE

CAPCOM Wally, Houston here. The doctors are recommending that you take one Actofed or the code echo.

SC That has to do with a decongestant, is that it?

CAPCOM That's affirmative. That's what it is.

SC Garble.

CAPCOM Apollo 7, Houston. We want to take a look at the (Garble). We'd like you to remain in P 47 for awhile after the burn on the Redstone pass.

SC Okay.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Roger, it looks like we're going to have one final request after the burn here. Our calculations show that our waste water is going to be 85 percent at about 19 hours and we're not sure that Donn can hook up all this good deal stuff in the middle of your guys' sleep there so it's kinda at your discretion. Do you want to dump it prior to going to bed or let Donn dump it sometime around 19 hours?

SC It's all but hooked up now. We have that urine dump hose hooked up at one end all the time. It's a simple job for one fellow without disturbing us but I had mentioned we could think about putting that waste water tank on up to more like 95 percent so you don't have to have quite as high an activity dumping it all the time.

CAPCOM We're kinda agreeing with you in a way, and yet we would kinda like to let it run up to the full point a little later on in the mission than in the early part of the mission.

SC Okay, we do have a gauge (garble) at 5 percent (garble) up about 90 - (garble)

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 15:29:00 80/1

CAPCOM Walt, I think we can give you a proper and actual number a little later on in the mission here. When we figure out how much fuel cell they are dumping the water in and (garbled).

SC (garbled)

Riley This is Mission Control. Guam as LOS. The tracking ship Redstone in the South Pacific will acquire Apollo 7 at 15 hours 47 minutes 58 seconds. That RCS phasing maneuver is due to take place 15 hours 52 minutes. At 15 hours 30 minutes, this is Mission Control.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, CST: 1:55:30 81/1

JAMES This is Mission Control at 15 hours, 47 minutes in the mission. We are coming within range of the Redstone now. We are 4 minutes away from the burn. We will standby through this pass.

CAPCOM Apollo 7, Houston, through the red Stone. Apollo -. Apollo 7, Houston request Amene A.

SC Roger, Amene A.

CAPCOM Roger.

SC Frantically -

CAPCOM Roger.

SC We flipped it in that vent during that launch. It is 0 and the double egress. You can see the difference.

CAPCOM Are you far?

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/11/68, GET: 15:54:00 82/1

CAPCOM Apollo 7, Houston. One minute LOS.  
I believe that we got our money's worth today. How about  
getting a good night's sleep.

SC Roger. Ron. Thanks for your help and  
Donn is on watch.

CAPCOM Roger.

JAMES This is Mission Control, 15 hours 56  
minutes. Redstone has had LOS. The Guidance Officer here  
in the Control Center affirms that that burn looked good  
here. And as you heard Wally Schirra and Walt Cunningham  
are preparing for their sleep period now. We will have a  
very low elevation pass at the Canary station at 16 hours  
21 minutes 39 seconds. This is Mission Control.

END OF TAPE

JAMES This Apollo Control 16 hours 20 minutes into the mission of Apollo 7. We are coming up on acquisition point with Canary Islands in about a minute and a half from now. We will listen in although it is possible that we won't hear anything at that time. The sleep period for the spacecraft commander Schirra and LM pilot Cunningham has begun now. Only about 10 minutes off their schedule. And that was due to the phasing RCS burn of the service module. The result of that burn is 83 to 98 nautical miles - it will be 83 to 98 miles ahead of the S-IVB at the time of the first SPS burn tomorrow. The next thing to do with the ECS water tank dump schedule is 19 hours into the mission. It will be scheduled for 28 minutes to dump an appropriate amount of water overboard from the spacecraft from the ECS water tank and that can be managed by the one pilot who will be awake at that time. The command module pilot, Eisele. We are coming up in acquisition with Canary Islands. We will stand by for whatever may come up from that.

CAPCOM Apollo 7, Houston.

SC Houston, Apollo 7. Go ahead.

CAPCOM Roger. Two items we would like a check on the CMP biomed harness when it is convenient. We are not doing anything and we would like to check the pin connectors, the signal conditioners connectors and at last resort press down on the sensor. Second item, information, it will probably take about 28 minutes for draining the H2O.  
SC Roger, I have been fighting this harness. It doesn't make up properly. I don't know how we are going to get it

CAPCOM Roger.

SC Running water.

CAPCOM I am sorry Apollo, I cut you out. Say again please.

SC I say my biomed harness is not making up properly. I don't know whether it is going to work.

CAPCOM Roger.

JAMES This is Apollo Control 16 hours 23 minutes going on 24 minutes into the mission of Apollo 7. We have passed away from acquisition with Canary Islands. The next contact will be with the tracking ship Mercury and that will be at 16 hours 51 minutes 49 seconds. This is Apollo Control.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 16:32:50 84/1

James                    This is Apollo Control. There will be  
a change of shift press briefing here in Houston at the  
press center at 10 minutes to the hour. That's  
approximately 18 or 19 minutes from this time. This is  
Apollo Control.

END OF TAPE

JAMES This is Apollo Control 17 hours 19 minutes into the flight of Apollo 7. We had contact at 16 hours 51 minutes with the Mercury tracking ship and Apollo 7. We will roll that tape now and after that we should have a light pass coming up with Redstone tracking ship.

CAPCOM Apollo 7, Houston.

SC Houston, Apollo 7. Go.

CAPCOM Roger. I have a couple of items here that we would like verification if you have it that the water chlorination was performed at 11 hours and 20 minutes. Second item, I mentioned it before, but I couldn't understand the answer. We want to advise it will take 28 minutes to drain the water.

SC Roger. Understand. 28 minutes to drain the water. You are referring to the waste tank dump.

CAPCOM I am sorry, waste tank dump. Affirmative.

SC Roger. We are only up to 40 percent on waste water so we got a ways to go.

CAPCOM Thank you. Apollo 7, Houston. Did you read me on the water chlorination?

SC Yes sir. That was - we did the chlorination at 11 hours 20 minutes.

CAPCOM Thank you.

SC Houston, Apollo 7. Command module pilot has got about 6 hours of sack time and at least 4 hours of pretty decent sleep. I would have slept a little better but I am not used to going to bed at 6 o'clock local time for me. I think in a day or two I will adjust to the cycle.

CAPCOM Apollo 7, Houston. Roger.

JAMES This is Apollo Control. We are now 17 hours 21 minutes into the Mission. At 17 hours 22 55 we will have contact with the Redstone tracking ship. At that time we will go live and stand by for any communication that we may have.

CAPCOM Apollo 7, Houston.

SC Houston, Apollo 7. Go.

CAPCOM Roger. We have a procedure that we would like for you to go through for some ground analysis. We monitor that you are in P00. We would like for you to follow this procedure: verb 22, noun 21, enter.

SC Roger. You want me to do verb 22, noun 21, enter.

CAPCOM Affirmative.

SC It is done.

CAPCOM Thank you. Roger. Now go plus 11111 enter.

SC Roger. Plus 5 one's enter.

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 17:19:00 85/2

CAPCOM Affirmative. Apollo 7, Houston. They are merely monitoring this from the ground. Also one other point. They would like to confirm the 40 percent reading on the water. On the waste water.

SC Oh, wait a second. Stand by. That is 75.

CAPCOM Roger, understand. 75.  
SC Roger, I gave you the wrong number

before.

CAPCOM All right.

END OF TAPE

CAPCOM Apollo 7, Houston. One minute til LOS.  
We'll be (garble) back to you.

SC Roger.

James This is Apollo Control, 17 hours 32 minutes into the mission of Apollo 7. We have the next contact coming up and will be with Canary Islands at 17 hours 53 minutes 11 seconds into the mission. During this pass, we heard passed up the words POO that the command module computer was confirmed to be in an idling mode. From that idling mode, then they passed in a verb and a noun which meant to enter digital entry into the computer to test the pulse integrating pendulous accelerometer to see how it was operating. We also had a report that 75 percent now is the readout on the amount of waste tank water instead of 40 percent. It still stands that at 19 hours the command module pilot will dump 28 minutes worth of water from that waste tank. At 17 hours 33 minutes into the mission. This is Apollo Control.

END OF TAPE

JAMES This is Apollo Control 17 hours 52 minutes into the mission. We are coming up on Canary Islands again. We should have acquisition at 17:53:11. And that will last for some 7 1/2 minutes. We will tie into that live. We now have an apogee of 164.4 nautical miles and perigee of 120.1 nautical miles. The spacecraft commander and the command module pilot are sleeping and lunar - excuse me - the lunar module pilot is sleeping and the command module pilot is awake at this time. There is nothing in the flight plan of activity until 19 hours into the mission when he will dump the excess water from the waste tank for 28 minutes. At this time, let's see if we have any contact with Canary Islands.

CAPCOM Apollo 7, Houston, AOS Canary.

SC Roger, Houston. Apollo 7.

CAPCOM Apollo 7, Houston. Opposite omni please.

SC Roger.

CAPCOM Apollo 7, Houston. Coming up in about 2 minutes LOS at Canary and we have a brief pass at Madrid and it will be about 40 minutes before we pick you up at Honeysuckle and we will need the S-band volume up at that time. That will be Honeysuckle about 18:38.

SC Roger. Understand. Honeysuckle S-band only 18:38.

CAPCOM Roger.

JAMES That is the end of our pass at Canary Islands. At 18 hours into the mission of Apollo 7, this is Apollo Control.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 18:36:00 88/1

JAMES This is Apollo Control 18 hours 36 minutes into the mission of Apollo 7. Apollo 7 is coming up on Australia at this time. We will have contact with the spacecraft. However, not necessarily voice contact, but we should be getting it, if any, starting about now. Let's tie into the conversation at that end.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston. One minute until LOS Honeysuckle. Redstone at 18 plus 57.

JAMES This is Apollo Control 18 hours 44 minutes into the mission of Apollo 7. No contact was made on that pass over Australia. The next possible contact will be with the Redstone tracking ship at 18 hours 57 minutes 30 seconds. At 18:44:52, this is Apollo Control.

END OF TAPE

JAMES This is Apollo Control 18 hours 57 minutes into the mission of Apollo 7. We are coming up now on the Redstone tracking ship. Should have acquisition in a matter of about a minute. We will stand by for any possible conversation.

CAPCOM Apollo 7, Houston

SC Roger, Houston. All set and go.

CAPCOM Roger, AOS Redstone.

SC Roger, I missed you at Honeysuckle.

CAPCOM Roger, we couldn't get lock on.

SC That is what I thought. It sounded

like it was trying there a couple of times.

CAPCOM I thought I heard you trying to answer too. All I heard was keying and side tones.

SC Yes.

CAPCOM Pogue said in Houston he would like some calrification on the biomed harness. If you can, just briefly, was it the connector wouldn't stay together or what?

SC Well, I got it together now. Are you getting any signal on it?

CAPCOM Negative. Okay, that is all I wanted to know.

SC Roger, I had trouble getting the plugs to make up. They would stick together, but they wouldn't quite go all the way in and lock. I finally got it to lock. What is your H2O waste water quantity now? Apollo 7, Houston. Opposite omni please? Apollo 7, Houston, opposite omni, please

SC Roger, Bill. I just switched off. Did you want to go back?

CAPCOM Negative. Stand by one. Apollo 7, Houston. Negative, you have it now. We have comm and we lost you there for about a minute.

SC Roger.

CAPCOM ... CAPCOM. Apollo 7, Houston, Opposite omni please. Apollo 7, Houston. One minute LOS Redstone and Antigua at 19 plus one six.

JAMES This is Apollo Control 19 hours 7 minutes into the mission of Apollo 7. We had a little bit of difficulty there. Astronaut Pogue was unsuccessful for a minute or so to make contact because the Redstone ship was having some trouble locking up on the voice signal. However, did make contact and the discussion among other things concerned calrification on the biomedical harness where the readouts during the Control Center on high grade, etc. and as of now it is not functioning. Although the medical people say that the power in the equipment is working

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 18:57:00 89/2

JAMES satisfactorily. So it must be some other problem. Possibly on board. At 19 hours 7 minutes 54 seconds into the mission, this is Apollo Control.

END OF TAPE

RILEY This is Apollo Control, 19 hours, 17 minutes into the mission of Apollo 7. We have just had CAPCOM contact with Apollo 7. At ANT we will now join the conversation.

SC Okay, these are test meter readings. They are all - they are 5C cycles, 5D is 4.8, 6A was 4.8, 6B and C were all 5. These were taken at about 16 hours.

CAPCOM Roger, understand. What is Apollo 7 Houston idea of flight update?

SC Roger, go with your flight plan update.

CAPCOM At 23 + 53, TV on. That is at Texas LOS on state side pass. That is the end of the flight plan update.

SC I understand you want TVR 23 + 53, how does that fit in with our burn and rendezvous sequence?

CAPCOM That should fit in all right.

SC Okay. We have some music coming in the background. Is that you?

CAPCOM You must be picking up the twilight zone there.

SC Evans, is someone trying to plug in a radio program to us or are we just picking that up spiritually?

CAPCOM That must be a spurious signal. No we don't have anything like that.

SC Okay, I am getting a hot tip on some hospital insurance plan from some guy.

CAPCOM Okay. Maybe they are trying to tell you something.

SC Maybe they know something I don't.

CAPCOM Apollo 7, Houston coming up on LOS ANT AOS Canary at 19 + 27.

SC Roger, understand. Around another 12 ticks on water for me, will you?

JAMES This is Apollo Control, 19 hours, 24 minutes into the mission of Apollo 7. We had astronaut Pogue passing up the flight plan update which indicates the completion of approximately one day, 23 hours, 53 minutes into the mission. We have the good possibility of live television coming from the spacecraft which will be released that will be roughly about 10 a.m. central time tomorrow morning. Correction, this morning would be around the end of the fifteenth revolution. Eisele also reported hearing spurious radio signals. He indicated that it was a radio program and he was getting a hot tip on hospital insurance plans from somebody whereupon astronaut Pogue said maybe they are trying to tell you something and Eisele retorted with maybe they know something I don't. Nineteen hours, 25 minutes into the mission, this is Apollo Control.

END OF TAPE

JAMES This is Apollo Control 20 hours 02 minutes into the mission of Apollo 7. We're coming up very shortly in about a minute and a half in contact with Carnarvon, Australia. At that time we may get some conversation from Cap Com here at MCC and the spacecraft quoting the flight plan which is not changed to this time. Shortly after the contact, we are scheduled to have an IMU initial measurement unit realignment using a matrix and it will also at that time they will obtain drift data on the initial gyro and the guidance system. We have several seconds, about 30 seconds to go before initial contact with Carnarvon. At this time we'll switch over and join such conversation as there may be.

CAP COM Apollo 7, Houston.

SC This is Apollo 7. Go.

CAP COM Roger, AOS Carnarvon.

SC Roger. Houston, Apollo 7.

CAP COM Apollo 7, Houston.

SC Roger. I was just doing a little star examination here at sunset with the sun at my back so to speak and you can see stars, quite a few, out the telescope however the minute you move the telescope controls a lot of sandy white particles flutter out and they obscure the field of view. I know what that is. Apparently these particles are some moisture in the optic assembly that flip out when you're moving around in shaft motion and they go out and obscure what you're looking with the sun shining on them.

CAP COM Roger, I understand that you can see stars in the telescope okay with the sun at your back, however when you move, the optics in shaft, their white particles come off and sort of cloud up the view.

SC That's right. Looks like its snowing out there and it would be impossible to do any kind of useful alignment with a situation like that. Also, at times when the sun is more direct on the side where the optics are, it appears to be either a lot of light leak or absolute sun shine reflecting down inside the optic assembly but except at near sundown with the sun at the opposite side from the optics you just don't see anything when you look out there. You just see a big blur of light.

CAP COM I understand that you apparently have something that looks like a light leak when the sun is directly on the side of the, ah, is that the side of the spacecraft without the colored lens.

SC Oh, I don't know if it's directly on that side or not, I can hardly tell, but at times when the sun is up and we get some ... and drifting attitude here I've looked in to see if I could see anything and it was just near impossible. I think a lot of light in the telescope, it had

SC                    the appearance of a light leak around  
somewhere in the assembly. I don't know if that's true or  
not or if it's just the reflection coming in but it makes  
it hard to see anything.

CAP COM              Right. Apollo 7, Houston. Have you  
been able to go through an alignment?

SC                    Not in the daytime. I'm going to do a  
fine align here in just a minute.

CAP COM              Okay.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 20:12:00 92/1

SC Houston, are you getting these gyro torques and angles.

CAPCOM ...stand by. Apollo 7, Houston, Roger, we are receiving yaw and torquing angle.

CAPCOM Apollo 7, Houston. Coming up LOS Honeysuckle at Redstone at 20 plus 33.

JAMES This is Apollo Control 20 hours 19 minutes into the mission of Apollo 7. We have just had our pass over Australia. The next contact will be with the Redstone tracking ship at 20 hours 33 minutes 14 seconds into the mission. During our Australian pass, we had some talk about the telescope, referring to the IMU realignment procedures where the telescope and darkness with the sun behind the astronaut and operated satisfactorily and when he moved the optics in the shaft snowy white particles appeared as he said, like a snow storm. At 20 hours 20 minutes into the mission, this is Apollo Control.

END OF TAPE

JAMES This is Apollo Control, 20 hours, 33 minutes into the mission of Apollo 7. We are seconds away from contact through the Redstone tracking ship. We will have contact with the spacecraft at this time. We will be passing up possibly a correction in the flight plan which will include a burn of the RCS system to check the Tipa. Here we go. Let's join the conversation.

CAPCOM Apollo 7, Houston.  
SC Roger, Houston, go.  
CAPCOM Roger. It is advised that we monitored you have had a switchover to a secondary loop proportional unit in a primary loop and request that you switch back to the primary or proportional unit.  
SC Roger, standby. Tom, we are now back on 1. Do you want me to leave it in 1, or go back to auto?  
CAPCOM Go to auto. Paul telling Houston to go to auto.  
SC Okay.  
CAPCOM Also, we are now monitoring 85 percent on waste water.  
SC Say again.  
CAPCOM Ground monitors 85 percent, quantity on waste water.  
SC I can't read you Bill, you're coming in garble, with a lot of static.  
CAPCOM Roger. Waste water dump, waste water dump, we're monitoring 85 percent.  
CAPCOM Apollo 7, Houston. How do you read now?  
SC That's better Houston.  
CAPCOM Roger, did you get my call about the waste water dump?  
SC Roger, say again about the water dump.  
CAPCOM We are monitoring 85 percent quantity waste water now.  
SC Roger, you're saying you got 85, I'll have to get Wally up to get under him, to get those pieces. I'd rather wait until he wakes up, which - he'll be awake in another hour or so anyway, could we wait till then?  
CAPCOM Roger, standby.  
CAPCOM Apollo 7, Houston. Affirmative, you can wait another hour. We're 1 minute LOS Redstone, and AOS Bahamas at 20 + 49.  
SC Understand.  
HANEY This is Apollo Control at 20 hours, 39 minutes into the flight of Apollo 7. To clarify what he said before, it is possible the Flight Director is considering

JAMES now in view of the fact that the PIPA, which is the pulsed integrating pendulour accelerometers mounted - there are three of them on each of the axis in the initial measuring unit in the Spacecraft and the Y-axis PIPA has been checked over the last many revolutions of the flight and it is possible that in order to check its operation more thoroughly that 1 minute RCS burn would, in an out of plane Y-axis would be utilized and if that were utilized, it would be similar between the 22 and 23 hour of the mission. This was not passed to the crew by Cap Com at this time, it's still under consideration and there's nothing of any alarm, certainly; but we will keep you posted on the progress of that situation. At 20 hours, 41 minutes into the flight of Apollo 7, this is Apollo Control.

END OF TAPE

HANEY This is Apollo Control 20 hours 50 minutes into the mission of Apollo 7. We are coming up on Mila acquisition in Florida and we should have some conversation. That position should be 20:50:19 5 seconds ago. So let's join the conversation.

CAPCOM Apollo 7, Houston.

SC Houston, this is Apollo 7, go.

CAPCOM Don, I would like to brief you all on something that has come here and it has to do with the Y pickup. Statement is made that based on telemetry readouts, we feel or suspect that Y pickup counts are not getting into the CMC. We've been monitoring practically zero. Now, this is still sort of in ferment, but it looks like now they would like to have an RCS burn completed to perform a check on the Y pickups. If so, this will be done on the next rev over Texas.

CAPCOM Apollo 7, Houston. This would be sort of a small burn +Y then -Y then total DELTA-V about 5 feet per second.

SC (garble) you had something for me and then you said something about a small burn. Would you run it by again, please?

CAPCOM Roger, Apollo 7, Houston. How do you read now.

SC Perfect. It's loud and clear.

CAPCOM Right. Based on telemetry readouts, we suspect that the Y axis pickup counts are not getting into the CMC. In order to check this out, we would like to do a small RCS translation +Y and then -Y, total test will consume about 10 pounds of fuel and it's proposed that this be performed at 22 + 23 and will be over Texas on your next pass.

SC Okay, 22 + 23, you will want a +Y and a -Y. Do you want us to have a program up like 47, then?

CAPCOM Okay, I'll go through the procedure that is proposed here now. Step 1, we would like to - the test to be done in two, also we would like to have A-Z roll enabled. Then attitude would be roll 180, pitch 326 and yaw 0. With that attitude, we would like a +Y translation of 7 seconds, wait 30 seconds, then translate -Y for 7 seconds, then turn the A-Z roll back off.

SC Wait a second, just hold the phone. You want two, you want A-Z roll enabled, I got 180, 3260 roll, after that I was replying on that but you were talking. Would you say all that again to the attitude?

CAPCOM Right, sorry about that. I will go over it slower. Roger, I'll go back over it. You got

CAPCOM correctly if we do want it in two, and we would like the SCS channel AC roll enabled also for the test. Attitude, roll 180, pitch 326, yaw 0, with that attitude, translate +Y 7 seconds, then wait 30 seconds - 30 seconds, then translate -Y for 7 seconds and the AC roll channel back off.

SC Roger. You have a terrible squeal in there, Bill, I don't know what it is. I understand and you want +Y for 7 seconds, then pause 30 seconds, then -Y 7 seconds. Now at what time again did you want this, 22 + how many?

CAPCOM We would like that at 22 hours and 23 minutes. That will be over Texas.

SC Okay, just out of curiosity, what do you hope to prove by having only two go in there. That won't - certainly won't put into the same vector if you do that.

CAPCOM Well, actually what we want to do is monitor your PIPPAS and see if in fact they are feeding information into the computer.

SC I see.

CAPCOM Also I have a block data update if you will call me when you are ready to copy.

SC All right, stand by.

SC Go ahead with your block update.

CAPCOM Roger. Be for 015 dash 1 alpha.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 20:58:00 95/1

SC I'm ready to verify your block update.  
CAPCOM Roger 015 - 1 ALFA plus 291 minus 0629  
0221042 4275 016-1 BRAVO plus 312 minus 0630 0234641 4539  
017-1 ALFA plus 298 minus 0629 025 22 18 4856 018-1 ALFA  
plus 252 minus 0685 026 56 28 5106 019-4 ALFA plus 314 minus  
1624 029 43 42. Apollo 7 Houston, are you reading?

CAPCOM Apollo 7 Houston  
SC Roger go ahead Houston. You dropped  
out there for three or four minutes.

CAPCOM Roger, Meyer here. How far did we get  
through on that?

SC Just up to 15.  
CAPCOM Roger. Did - okay, I'll go through  
015-ALFA briefly again. 015-1 ALFA plus 291 minus 0629 022  
10 42 4275. Starting with the next one 016-1 BRAVO plus  
312 minus 0630 023 4641 4539 027-1 ALFA plus 298 minus 0629  
025 2218 4856 018-1 ALFA plus 252 minus 0685 026 5628 5106  
019-4 ALFA plus 314 minus 1624 0294342 4363 0202-4 ALFA  
plus 310 minus 1623 0311829 4679 021-4 ALFA plus 261 minus  
1633 032

END OF TAPE

JAMES ... 21 - 4 Alpha plus 261 minus 1633.  
0325356 4 niner 44. Standing by for a read back.

SC Roger, we (garble) 015-Alpha plus 291  
minus 0629 0221042 4275 016-1 Bravo plus 312 minus 0630  
02346414539 017-1 Alpha plus 2 niner 8 minus 0629 0252218  
4856 018-18 plus 252 minus 0685 02656285106.

CAP COM Apollo 7, Houston. Apollo 7, Houston.  
Apollo 7, Houston. Apollo 7, Houston. Apollo 7, Houston.

SC Roger, go.  
CAP COM Roger, you got only part of the read  
back, if you would confirm in the third block 017-1 Alpha,  
second line plus 2 niner 8.

SC Roger, plus 2 niner 8.  
CAP COM Okay, if you would pick up and read as  
far as you can get, starting with 019-4 Alpha.

SC Okay, here goes.  
16240294342 4363 020-4 Alpha plus 310 minus 1623031829 4679  
021-48 (voice fades out).

JAMES This is Apollo Control, 21 hours, 11 min-  
utes, 42 seconds into the mission of Apollo 7. As you heard  
on that communication between Cap Com and Apollo 7, the  
Flight Director, Jerry Griffin has decided that we need an RCS  
burn to a minimal burn to check the PIPA or the accelerometer,  
pulsed integrating pendulous accelerometer counts onboard the  
Spacecraft. This burn will take place at 22 hours, 23 minutes  
into the mission. The reason that it is based on telemetry  
readouts, the PIPA or accelerometer counts may not be getting  
into the Command Module Computer. Now, this particular Y-axis  
accelerometer, if you can imagine the Astronauts lying on  
their couch, the Y-axis would go from hip to hip. So this  
accelerometer would measure velocity changes and translation  
along the axis, not around the axis. Therefore, an RCS burn  
would - will take place 22 hours, 23 minutes into the mission  
and it will be in IMUP, that is the platform, the IMU platform,  
will be idling, roll 180 degrees, pitch 326 degrees, yaw 0;  
and they will burn on that Y-axis, along the Y-axis a trans-  
lation burn for 7 seconds and they will wait for 30 seconds,  
then they will burn on -Y the other way along the axis for  
another 7 seconds, and then here in the control center, they  
will readout whether or not the PIPA counts are getting into  
the Command Module computer, if it influences the PIPA read-  
outs. At 21 hours, 14 minutes into the mission, this is  
Apollo Control.

END OF TAPE

JAMES This is Apollo Control 21 hours 37 minutes into the mission of Apollo 7. We are about 10 seconds away from acquisition at Carnarvon, Australia, so lets join what conversation there may be.

CAPCOM Apollo 7, Houston.

SC Roger Houston, Apollo 7. Go.

CAPCOM Roger. AOS Carnarvon. I also have an advisory. We're monitoring 90 percent, 90 percent on waste water now, and we'd like to get a dump whenever - as soon as it is convenient.

SC Okay. Wally is still in the sack. As soon as he is up we'll dump it and meanwhile I'm starting to maneuver around to the attitude for that little test maneuver you want to do.

CAPCOM Roger. Thank you.

CAPCOM Apollo 7, Houston. We're about - a little over 1 minute to LOS Carnarvon. Request S-band volume up please.

SC Roger. S-band volume going up.

CAPCOM Thank you.

JAMES This is Apollo Control 21 hours 45 minutes into the mission of Apollo 7. Evidently we'll have no more conversation on our Australian pass. On this revolution, 14th revolution, going - well, correct that, the 15th, the beginning of the 15th revolution we will have the service module RCS burn to test the accelerometer and to get a readout hopefully on whether or not the accelerometer counts are getting into the command module computer. This is to be done at 22 hours 23 minutes over Texas. At 21 hours 46 minutes, this is Apollo Control.

END OF TAPE

JAMES This is Apollo Control 21 hours 54 minutes into the mission of Apollo 7. We had further CAPCOM communication with the crew of Apollo 7 over Australia and it is taped and I would like to bring it to you now.

CAPCOM Apollo 7, Houston.

SC Roger, Houston go, Apollo 7.

CAPCOM Roger. After the RCS test over the states, we will be sending up two nav loads and one target load and we will get to work on them as soon as we can.

SC Okay, fine. Hey Bill?

CAPCOM Right, go.

SC Roger. A couple of hours ago, I neglected to tell you before, I'm sorry, we had an anomaly up here. We had a AC buss 1 drop out and all we did was reset it and it kept on running and we never did see anything anomalous other than that, other than we confirm that the voltage has dropped off and the inverter come off the line apparently.

CAPCOM Okay, you had an AC buss 1 drop out and you reset it and it was okay but you did confirm it was a bona fide malfunction because the voltage did drop.

SC That's right. All three phases were well, were pegged on the bottom of the meter and all we did was hit reset and punch the warning lights off and it kept right on running.

CAPCOM Okay, thank you very much. That is copied.

SC Okay, we've had no trouble with it since. Everything is normal.

CAPCOM All right, thank you.

CAPCOM Apollo 7, Houston. Coming up on LOS at Honeysuckle. We will have acquisition Texas at 22 + 19.

SC Roger. You are saying 22 + 19.

CAPCOM Right.

JAMES This is Apollo Control. That concluded our Australian pass. Our next contact will be on our stateside pass coming over Texas and at 22 hours 23 minutes we will have a burn over Texas of the RCS service module engines and that will test the pulse integrating pendulous accelerometer status in the spacecraft. The Flight Director is concerned that possibly this accelerometer, the counts from the accelerometer may not be getting into the command module computer. The command pilot and the LM pilot are due to be awakened in a matter of moments on the hour and we should be in contact with Texas and the spacecraft at 22 hours 19 minutes 52 seconds. At 21 hours 57 minutes this is Apollo Control.

END OF TAPE

JAMES This is Apollo Control at 22 hours, 19 minutes into the mission of Apollo 7. At this time, we do not have contact, but we will with the Spacecraft at 22 hours, 1952. The Spacecraft Commander and the LM Pilot should have been awakened on the hour, 19 minutes and 27 seconds ago. There was a lithium hydroxide change scheduled, the second change scheduled in the flight plan, which we assumed has taken place. At 22 hours, 23 minutes, we are coming up on the service module RCS reaction control system burn to test the accelerometers in the IMU. We now have contact with the Spacecraft. Lets join the conversation.

CAPCOM 22 hours, 20 minutes, 9, 10, 11, 12.  
SC Roger, we're (garble).  
CAPCOM And counting down to burn, 2 minutes and 38, 7, 6, 5.  
SC Roger, thank you.  
SC Houston, Apollo 7. Do you read?  
CAPCOM Roger, Apollo 7, Houston. Go.  
SC Roger, I'm on the right lead head-set.  
I commenced dumping the waste water tank about 2 minutes. I'd like to have you confirm the temperature in that outline, when ever you get a chance.  
CAPCOM Roger.  
SC And I'm going to send down, as I told you about, the AC Buss 1, temporary glitch there. I can't figure why it came off, I don't think we have the automatic disconnect anymore.  
CAPCOM Roger, we copy that one.  
CAPCOM Apollo 7, Houston, we would like a TLM input to high please, telemetry input high.  
SC Look, if you guys are in the middle of a dump, I have to go plan the E set to do that. If you are in the middle of a dump, I'm going to stop it.  
CAPCOM We're not dumping.  
SC You guys can either stop your dump in command high or I'm going to do it.  
CAPCOM Apollo 7, Houston, we are not dumping.  
SC Okay, thank you.  
SC Ready in high?  
CAPCOM Right. (garble)  
SC Affirmative.  
SC Roger. We're going to do a countdown to the burn.  
CAPCOM Roger.  
SC 4, 3, 2, 1, mark.  
CAPCOM Apollo 7, Houston. That PIPA check

CAPCOM looked good. Good information and we will be updating your PIPA bias later.

SC Roger, understand the check looked good. Thank you. Glenn, we checked the PIPA's on here tight and I've got just about 0 PIPA bias when I did, although there is someone else loaded it in, I was a little suspicious on the basis of that.

SC You say you did get outputs from it and you think we're still okay.

CAPCOM Roger, it looks so good, it fooled us.

SC Okay.

CAPCOM We were thinking along the same lines as you were.

SC Alright, I try to get an updated bias then.

CAPCOM Roger.

SC Waste water quantity down to 50 percent, how are you doing it.

CAPCOM Standby.

SC Can you tell me what that dump line temperature is?

CAPCOM Apollo 7, Houston. I'm trying to get that information for you, standby. Your dump temperature is 66 degrees and the quantity is now reading 47.2.

SC Roger, thank you, we're just about in agreement with that.

CAPCOM Apollo 7, Houston. If you are ready to accept, we'll send up your NAV load.

SC If you have time this pass, why don't you give us an updated readout on our quad RCS quantities.

CAPCOM Your RCS (garble) quantities?

SC That's affirmative.

CAPCOM Roger, standby.

CAPCOM Apollo 7, Houston, we'll brief you on that just a little bit later.

SC Understand.

CAPCOM Apollo 7, Houston. Will you go to accept, please.

SC Accept telemeter.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 22:29:00 100/1

CAPCOM Apollo 7 Houston, you are go for a 33 dash 1  
SC Roger go for 33 dash 1. Did you receive our comment, we had a flight plan update for TV UD and we will be unable to support anything but the scheduled flight plan activity until after the rendezvous.

CAPCOM Roger, understand.

CAPCOM Apollo 7 - Houston. I am still waiting for the exact number, but your RCS propellant quantity does look near nominal

SC Standing by

SC Hey, you notice any difference in the first part quality, I'm on the lightweight headset now.

CAPCOM I was reading Donn much more clearly.

SC Understand

CAPCOM Apollo 7 - Houston Both Nav loads and target loads in the computer are yours, also I have the, a list of the RCS usable propellants, Quad A, 285, B 299, C 281 D 297

SC Roger You say 285, 299, 281 and 297 Right?

CAPCOM Apollo 7 - Houston Affirmative. I am trying to get that converted to percent.

SC We would like a total percentage readout on that.

HANEY This is Apollo Control, 22 hours 34 minutes into the mission of Apollo 7. In that pass over the United States, we completed the service propulsion system RCS burn. We gave them an update on the amount of propellant left in the RCS system and we confirmed that the waste water percentage is down to 47.2 percent in quantity, where it had been 85 percent. So the dump was satisfactory and the burn was satisfactory for the PIPA check. To repeat, the purpose of the burn that was not originally scheduled in the flight plan was based on the fact that the flight director was concerned because the PIPA which is the pulse integrating pendulous accelerometer in the instrument measuring unit and the guidance and navigation system on the spacecraft. They were concerned that the accelerometer counts may not be getting into the command module computer. This is an integral part of the guidance and navigation system. There are three such accelerometers mounted in the instrument measuring unit and they measure along all three axes, X, Y, and Z. This particular accelerometer that was in question was the Y axis accelerometer and that accelerometer has now proven from

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 22:29:00 100/2

HANEY ground readouts to be operational. The next contact we will have is with Canary Islands, 22 hours 37 minutes into the mission. It is now shortly a little less than one minute from this time so we will switch over for any further communication from the spacecraft.

CAPCOM

Apollo 7 - Houston

APOLLO 7 - Houston

SC

Houston - Apollo 7 - Go

CAPCOM

Roger, regarding the.....

END OF TAPE

CAPCOM Apollo 7, Houston.  
SC Roger, Houston, Apollo 7. Go.  
CAPCOM Roger. Regarding the flight plan, now,  
problem here, we would just ask if he considered it, and it  
is in there at this particular time because of the passage  
over the site.  
SC Roger, Bill, I understand. We're going  
to be pretty busy along about then, and I think we are going  
to continue with what we had planned for normal activities.  
CAPCOM Roger. Let me go over my update again,  
now. That time was at 23 plus 53 plus 00 and I might have  
set that time up wrong. Looks like at that particular time  
it could possibly be worked in.  
SC Roger, it's the right time. No TV till  
after rendezvous.  
CAPCOM Apollo 7 Houston. I have the RCS pro-  
pellant usable in terms of percentage. Do you want me to  
read them or not?  
SC Roger, go ahead.  
CAPCOM Roger. RCS usable remaining quad A-  
Alpha 86.7 percent, B-BRAVO 91 percent, C-CHARLIE 85 percent,  
D-DELTA 90 percent.  
SC Roger. Understand, Usable remaining  
86, 91, 85 and 90,  
CAPCOM Roger  
CAPCOM Apollo 7, Houston. I have PIPPA-5  
update.  
SC Roger, standby.  
SC Go ahead, Bill.  
CAPCOM Roger, for the verb 21 noun 1 niner  
1720 niner, the PIPPA-5 is 0 niner.  
SC Roger, understand 0 niner.  
CAPCOM Right.  
CAPCOM Apollo 7, Houston, 1 minutes LOS CYI,  
TAN at 22 plus 59.  
SC Roger.  
JAMES This is Apollo Control 22 hours 45 minutes  
into the mission of Apollo 7. That concludes our pass. The  
next contact will be Tananarive 22 hours 59 minutes 39 seconds  
some 14 minutes from now. We have a GO for 33 revolutions.  
Things look good on the spacecraft right now. This is  
Apollo Control.

END OF TAPE

PAO This is Apollo Control 22 hours 59 minutes in the mission of Apollo 7. At this time I believe we will give a rundown of the activities since roughly 8 hours ago. At 15 hours 23 minutes, Astronaut Schirra requested permission to take one decongestant tablet. He had taken two aspirin earlier. The problem seemed to be that his nose was stopped up and he had gone, as he had said, through several Kleenexes, and at that time he was told to take a decongestant tablet. We then had an unscheduled, up to that - shortly before that time, an RCS service module burn. Then the commander and the LM pilot entered a sleep period at 15 hours 52 minutes into the mission. The reason for the RCS burn was to position the command and service module some 26 hours into the mission, or 3 hours from now, roughly, well ahead of the S-IVB stage of the booster, which it will rendezvous with at that period in the flight. We will turn out to be, after that burn, 83 to 98 nautical miles ahead of the S-IVB at the time of the first service propulsion system burn, so it was a highly successful burn. Then we had a situation where excess water from the environmental control system, primary system waste tank was looked at closely and it turned out that it had to be dumped. Several minutes ago it was accomplished and it went from 85 percent down to some 45 - 47 percent, which is a most acceptable level in the waste tank. We have had some problem with the biomedical harness, which didn't seem to operate and 18 hours 58 minutes into the mission, it came up and it was indicated by the command module pilot Eisele that he had checked the harness but still on the ground no signal was coming into the Control Center on biomedical readout. So the doctor, Dr. Beers here in the Control Center, indicated that the equipment was working okay and he had to assume that the trouble was somewhere in the spacecraft. At that time, the water tank quantity was building up and had reached 78 percent and it stayed right around that quantity until, as I say, a short while ago it was dumped. It took some 28 minutes to dump it down to around 47 percent. We had flight plan update 19 hours 17 minutes into the mission. We then had it confirmed that the television was scheduled for the Texas pass at some 23 hours 53 minutes into the mission. At that time, Eisele reported receiving spurious signals - it was a radio program. As he said a hot tip on hospital insurance plans from somebody. Eisele reported 20 hours 8 minutes into the mission that the telescope when he was in darkness with the sun behind he could see the stars fine, but when the object was moved snowy white particles appeared as he

PAO said like a snow storm. He also noticed some sun shining down the barrel of their telescope at certain times. He did not know the exact position of the sun when that happened. We're in a situation 20 hours 29 minutes into flight when the Flight Director Griffin came to the conclusion that the accelerometer in the inertial measuring unit that on the Y-axis possibly was not functioning properly and that the counts possibly were not getting into the command module computer. He then determined that we should have an out-of-plane burn, an RCS reaction control system on the service module burn in the Y-axis that's laterally of - and that the burn would be 7 seconds plus Y and 7 seconds minus Y with a 30 second space in between. Would be a total of about, as it turned out, a 5-foot per second burn. That was passed to the crew and that burn did take place and it did prove that the accelerometer in the inertial measuring unit was not malfunctioning and was checked out here on the ground as working properly. It was then concluded and confirmed that the waste water tank dump was completed, confirmed on the ground - the exact quantity remaining as of now is, or a short while ago, 47.2 percent quantity in the waste water tank in the environmental control system. We then got a go a very short while ago 22 hours 30 minutes into the mission, a go for 33 revolutions. We then had service module reaction control system readout on quantities. Quad A we have 86.7 percent left; Quad B we have 91 percent of the propellant left; Quad C 85 percent left; and Quad D 90 percent left. That's the status as of now at 23 hours 5 minutes into the mission of Apollo 7. This is Apollo Control.

END OF TAPE

CAPCOM Apollo 7, Houston CAPCOM. Apollo 7,  
Houston CAPCOM. Apollo 7 Houston.  
SC Houston, Apollo 7. Are you reading  
me?  
CAPCOM I read you five by how me?  
SC Roger. Reading you fine. Over.  
CAPCOM Okay, Wall I've got a T align time for  
you I'd like to pass up. We've got a short pass here.  
SC Roger.  
CAPCOM Roger. T align 23 plus 24 plus 08 00.  
SC 23 plus 24 plus 08 00. Roger. Over.  
CAPCOM Roger. That's correct. Now concerning the  
matter of the television, there's been considerable discussion  
here in the center. The flight Director - want's you to  
turn on the television at the appropriate time.  
SC Walt will be on the air shortly.  
CAPCOM Okay, Wall after this I've got NCC one  
pad I'd like to give you and if I can't give here I will  
give it over Carnarvon .  
SC Roger. Go with it.  
SC Go with your maneuver pad.  
CAPCOM Let's wait first and get Wally's comments  
on the television.  
CAPCOM Okay Walt, we'll go ahead with the NCC  
pad here.  
SC Ready to copy.  
CAPCOM Okay, 026 24 5510 plus 00617 minus  
00010 plus 01985 1960 plus 1243 01978 32398 minus 0 niner 0  
minus 030 010 35 1981 151 025 41 - we've lost him. 5500

END OF TAPE

JAMES This is Apollo Control Houston 23 hours 33 minutes into the flight of Apollo 7 with the spacecraft just pulling northeast of Australia. During the Australian pass, it was concluded that there would be no television transmission, I repeat no television transmission across the states in the next rev. A number of reasons are cited in the communication from Captain Schirra and here is the tape of the entire Australian pass now.

CAPCOM Apollo 7, Houston. Roger, Wally, I would like to finish the NCC 1 pad and could you tell me how far you copied before we got LOS at Tananarive?

SC Roger, Jack. I got 25 hours 41 minutes of the nav check, I didn't get the seconds. Continue after that.

CAPCOM Okay. Starting at the seconds. 5500 + 2766 - 05376, 1126359284359. You have the T align of 23 + 24 + 0800.

SC Roger. The T align was 23 + 24 + 0800, NCC 1 26245510 + 00617 - 00010 + 019851960 + 12430197832398 - 090 - 030010351981151025415500 - 2766 - 053761226359284359 over.

CAPCOM Roger, it is correct except the - in noun 43 the latitude, the sign should be + 2766.

SC Roger, I have the plots here.

CAPCOM Okay, you got it. Go ahead Wally.

SC Roger. You have added two burns to this flight schedule, you have added a urine water dump, and we have new vehicle up here and I tell you this flight TV will be delayed without further discussion until after the rendezvous.

CAPCOM Roger, copy.

SC Roger.

CAPCOM Apollo 7, this is CAPCOM number 1.

SC Roger.

CAPCOM All we have agreed to do on this is flip it. Apollo 7, all we have agreed to on this particular pass is to flip flip the switch on. No other activity associated with TV, I think we are still obligated to do that.

SC We do not have the equipment out, we have not had an opportunity to follow setting, we have not eaten at this point, I still have a cold, I refuse to foul up our time lines this way.

CACOM Apollo 7, Houston. Could we have opposite omni please and your PMP power to OX.

SC PMP going to OX now. Hey Jack, they left us without that tape recorder running again in - after the last pass. The problem we have here is I am

SC                   hesitant to stop and command reset and start tape going because you might be in the middle of a dump that you want to continue later. So we really are left without nothing between passes at the - tape motions left barber pole like that.

CAPCOM               Okay, we copy.

CAPCOM               7, Houston.

SC                   Go ahead.

CAPCOM               Walter, the reason the - you lost the tape recorder at barber pole when you left Canaries we had a power loss at Canaries just before LOS and we didn't get the command to you. It shouldn't happen again, everybody has been briefed on the proper operation there.

SC                   Okay Jack, I understand. I guess, I am going to assume if it's barbar poled after we have left contact with you, then it's running in a forward direction and ready to record. Jack, can you verify that?

CAPCOM               Stand by. Let me get the word from EECOM.

CAPCOM               Okay, Walt, EECOM says that assumption of yours is correct.

SC                   Thank you, and for your information down there, I have yet to activate the SPS line heaters. They have been off ever since liftoff. The temperature seems to be holding very, very constant at 70 and I verified that with the oxidizer feedline temperature off.

CAPCOM               Okay, real fine.

SC                   And did you ever get the command module RCS temperatures down there during the night?

CAPCOM               Yes we did. Do you want them passed up?

SC                   Negative. We are going to be doing some from time to time. I will pass them on to you.

CAPCOM               Okay.

CAPCOM               Apollo 7, Houston. We would like to have your TLM switch pushed to low.

CAPCOM               Apollo 7, Houston.

CAPCOM               Apollo 7, Houston.

PAO                   This is Apollo Control. Again repeat, there will be no television attempt, use of the television equipment made before the rendezvous attempt coming later in the day. And the revolutions are such that we would not then be able to attempt it until at least tomorrow and perhaps the next day. We are undecided right now whether to attempt a television pass tomorrow or not. In the course of the conversation regarding the use of the camera, you heard someone identifying himself as CAPCOM number 1, come in and

PAO take the microphone. That was Donald Slayton. He, on the basis on his discussion with Wally Schirra - here in the Control Center it was concluded that we should not attempt the TV pass today. Prior to that there had been some feeling that we should go ahead and follow the general time line as closely as possible. This is a matter in which the Control Center decided they should accept the crew commanders judgement and that was that it would overload them to attempt before the rendezvous. The principal of additional work, it may sound simple just to turn on the TV camera, but it does mean a good deal of effort in setting light conditions and setting shades, pulling shades on five different windows and controlling the general level. I think that is the biggest order of difficulty. At 23 hours 42 minutes into the flight, this is Apollo Control Houston.

END OF TAPE

APOLLO 7 Mission Commentary, 10/12/68, GET: 23:51:00 104/1

PAO This is Apollo Control Houston, 23 hours 51 minutes into the flight. The Guaymas station is due to ....we are due to acquire the spacecraft through Guaymas momentarily and this pass will bring the spacecraft across Mexico, across the northern Gulf of Mexico and cut across Florida, should be an active pass....let's listen.

COMM We have some information on your evaporator and ECS procedures for and during the rendezvous here. We would like for you to stay in your present configuration using the primary system with the radiators. If the evaporator, primary evaporator, or evap temperature goes higher than 60 degrees, we would like for you to activate the primary evaporator then. And if it doesn't work, we would like for you to re-service that primary evaporator and shut it down, activate the secondary coolant loop with the radiator bypass.

SC Roger, understand. Additional PR..... One question, did you say glycol evaporator outlet temperature above 60 or the radiator outlet temperature above 60.. over.

COMM Walt, the evaporator outlet temperature greater than 60.

SC Roger, understand, evaporator outlet above 60 and activate the primary water boiler if it doesn't work again, I will re-service it, shut it down and activate secondary cool loop with the radiator bypass.

COMM Roger.

SC Houston - Apollo 7, I have the PMP back to normal after that last pass.

COMM Roger, copy.

.....is 56 minutes

(garbled)

(garbled) .....7 minutes

Apollo 7 - Houston

SC Roger, sounds like you're having a ball down there.

COMM Rog. We just want you to know your (garble) line for your rest mats compares favorably with ours down here.

SC Thank you...we're just going by overhead just skimming the Gulf Coast right over the water.

COMM How does the weather look?

SC Not bad, about .....(garbled) just across Tallahassee at this point. (garbled)

COMM Roger

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 23:51:00 104/2

SC	Just took a picture of (garbled) wave
That's been the fifth	
COMM	Did you request Crestview direct to
Orlando?	
SC	Direct (garbled)
END OF TAPE	

SC It's also over Daytona. It will be just overcast I guess. There's about 3/10 coverage, (garbled)it's a good day for it.

CAPCOM Nothing right now. We'll have you almost continuous coverage here through CYI for another 15 minutes or so.

SC Roger. (Garbled) stay in here and get this little food down.

CAPCOM Okay, we'll standby.

CAPCOM Apollo 7, Houston, opposite omni.

SC 24 hours (garbled) minutes into the flight 5 clicks on the water gun for the LMP.

CAPCOM Roger. Copy.

SC (Garbled)

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 241100 106/1

CAPCOM Apollo 7, Houston (garble).

CAPCOM Apollo 7, Houston. One minute LOS

Canary. Will pick you up at Tananarive in about 15 minutes.

END OF TAPE

HANEY This is Apollo Control Houston 24 hours 38 minutes into the flight. We've been in touch with the crew by Tananarive. We are now, and here's how that conversation is going.

CAPCOM Apollo 7 Houston to Tananarive.

SC Apollo loud and clear.

CAPCOM You're five by also. We'll have continuous coverage here to Carnarvon. ARIA 2 comes up when we lose Tananarive in about 8 minutes.

SC (garbled)

CAPCOM Wally, I didn't quite get it. Are you saying that the dumps are affecting the system operation or is that -

SC We sectioned off the particles that came off the rear deck or water dump.

CAPCOM Roger, copied.

SC (garble) this would be a problem when we don't have the ways to drop out the soot.

CAPCOM Okay, copy.

SC I would like to get the rest of the flight plan for (garble). The recommendation does not (garble)

CAPCOM Okay, copy that.

SC This is Apollo 7.

CAPCOM Go ahead.

SC We have a (garble)

CAPCOM Okay, go ahead.

SC To place the X-axis of the spacecraft on target, the target must be in the upper right quadrant, the (garble) has got it, up 1 degree and right 1 degree.

CAPCOM Roger, copy.

SC This is Apollo 7. I have the results of the command module RCS (garble)

CAPCOM Say again, 7.

SC I have the results from the command module RCS temperature check, I've just completed. You may copy.

CAPCOM Go ahead.

SC Roger. 5C and D and 6B, C, and D are all power volts. 6A is at 4.90.

CAPCOM Roger, copy.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 24:58:00 108/1

PAO This is Apollo control Houston, 24 hours  
58 minutes into the flight. We are over Australia and the  
pass is progressing in this way.  
COMM (garbled)  
PAO Houston, through Carnarvon standing by.  
COMM Walt, we picked up honeysuckle, in about  
5 minutes you might want to turn up your S-band at that time.  
SC Roger. ....pressure reading of 200 mil  
of mercury  
COMM Say again.  
SC 0 2 points of pressure, 200 mil of mercury  
COMM Okay, copy that.  
SC .....(garbled) S-band on this pass?  
COMM We pick up honeysuckle in at 55 here,  
you can turn up S-band volume if you want.  
SC Roger, by the way how does S-band sound  
to you down there today?  
COMM Everything sounds real good. It is a  
real nice comm.  
SC We were surprised you fellows started  
talking over Tananarive this morning  
COMM Roger  
SC (garble) bad yesterday  
COMM Apollo 7 Houston, we..could we switch  
your bio med switch to the commander?  
SC Yes sir, my pulse is down now.  
COMM Okay.  
SC Houston - Apollo 7  
COMM Go ahead  
SC Did you consolidate the BC....0197.8, is  
that correct.  
COMM Standby. Apollo 7 - Houston. That is  
the correct number at this time, we expect another update  
though as we progress.  
SC Roger  
SC Houston - Apollo 7  
COMM Go ahead  
SC Roger, just before band check, we're GO  
COMM Roger, copy.  
SC Could you give us an update on our .....  
garbled)  
COMM Roger, you want a chart update, is that  
SC That's right  
COMM Okay, standby

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 24:58:00 108/2

COMM Apollo 7 - Houston, I have the orbital  
map update.

SC Go ahead

COMM Rog. For rev 16, the GET on the nose  
will be 25 + 12 + 45, longitude will be 168.5 west, a right  
ascension 06 + 27.

SC Rog. our ascension 06 and 27 and the  
crossing on the map as 25 + 12 + 45, 168.5 west.

COMM Roger

SC As to the cold I have, I took 2 aspirin  
before sleep last night and 1 actived that is a total dose  
so far. I think I'll take another actived during this period.

COMM Dr. Berry says yes, take another one  
during this period.

SC Roger. We are currently doing the  
oxygen part of P528.

COMM (garbled)

PAO This is Apollo Control Houston..25 hours  
2 minutes into the flight. The spacecraft is now proceeding  
northeast of Australia and we will not expect another con-  
tact until perhaps Hawaii, the pass shades in right on the  
line just below the line of acquisition, looks more like a  
solid acquisition at the Huntsville. The Huntsville is due  
to acquire at 19 minutes 25 hours 19 minutes into the flight  
about 16 minutes from now. A word on the visitors in the  
control center this afternoon, this morning, Mrs. Low  
Cunningham, the wife of Lunar Module pilot Walt Cunningham  
was here, arrived about 9:30 with their two children, Bryan  
and Kimberly and they stayed in the control center for about  
an hour along with a house guest of the Cunninghams, a Mrs.  
Lynda Johnson. They left here about 10:30. We discussed  
Schirras admitted cold with Dr. Berry and all hands agree  
that Wally sounds a little stuffed up, a little husky and  
you heard him ask for and it was suggested that he take  
another Actived which is a decongestant tablet. This is the  
second Actived, he took two aspirin before he went to sleep  
last night. At 25 hours 4 minutes into the flight, this is  
Apollo control Houston.

END OF TAPE

PAO This is Apollo Control Houston, 25 hours, 23 minutes into the flight. We've been in touch with the crew by Hawaii, they're now in the Huntsville, the ship Huntsville zone of acquisition and here is how their conversation is going.

CAPCOM Last P52 came out.

SC Roger, the P52 came out fine, but the (garble) started the difference and (garble). No problem with the optics, There will be (garble) and all came out fine.

CAPCOM Okay, that's real good news. We'll expect you to be in (garble) sometime around 2533 for these command uploads here.

SC Fine.

CAPCOM Okay, one other message here this morning. The flight of Apollo 7 dominates the news this morning. We received a number of special messages regarding the flight, including one from President Johnson, who watched the launch on television at the White house. Here is his message to you. "Congratulations on the splendid beginning of the Apollo 7 flight. The nation is proud of you and the many in NASA, the services, and the private companies which have combined to make such a successful man space flight. Everything in the President's office came to a halt as I and the Foreign Minister Debret of France watched with mounting excitement the magnificent launch of the Saturn 1B. You can well imagine the great pleasure which filled the room as word came of your successful insertion into orbit. The path to the moon takes courage, ability, and devotion to our goal. You are making a major stride in this star-studded way." Also, we received another message from Vice-President Humphrey, the Head of the Space Council, which says that the nation is proud of Apollo 7. Also, the Olympic Games start today in Mexico City and we'll keep you posted on the result.

SC Roger, thank you. I just finished the cryo fuel G test for the oxygen tanks at the 90 percent level and it looked like there was very noticeable stratification at 910 psi, when I turned the heaters off and the (garble) on, the surface dropped the left tank down to 860 and the right tank down to 850. All unit fans are back on AUTO now.

CAPCOM Okay, Roger, we copy.

SC Jack, we look very good up here and (garble).

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Now that you're down, we would like you to key in enter, so we can look and see if there were any additional program alarms.

SC Okay Jack, I did and nothing came up.

CAPCOM Okay, fine.

CAPCOM Apollo 7, Houston.

SC Go ahead Houston.

CAPCOM If you will hit the reset button, we can get rid of that program alarm 1105. Apollo 7, Houston.

SC Go ahead, Jack.

CAPCOM If you will go to ACCEPT we will send you up those three updates.

SC Roger, you got it.

CAPCOM Okay.

PAO This is Apollo Control Houston. In this lapse, you will recall in the Morning News Flyer the Cap Com references and the message from Vice-President Humphrey. In the full text of that message is as follows: "Hearty congratulations and all good wishes for this historic Apollo 7 mission. The nation is proud." End of statement. Now we will go back to the pass.

CAPCOM Roger, MCC1 026 24 5520 plus 00635 minus 00013 plus 01 niner 63 1961 plus 1252 01 niner 62 32339 minus 0 niner 0 minus 030 010 35 1 niner, niner 2 162 025 42 all balls plus 2756 minus 05340 1225 358 285 359. Remarks posigrade, pitch down 70 degrees, heads up.

SC Roger, I read that fine. MCC1 026 24 5520 plus 00635 minus 00013 plus 01 niner 63 1961 plus 1252 0 ...

END OF TAPE

SC 9681961 plus 1252 01962 32339 minus 090  
 minus 030 410 351992 162 025 42 0000 plus 2756 minus 05340  
 1225 358 35359. It's a posigrade pitch down 70 degrees  
 air sep.

CAPCOM Roger, that's correct. Thank you.

SC This is Apollo 7.

CAPCOM Go ahead.

CAPCOM Apollo 7 Houston, Go.

SC Yes, were you trying to send us some  
 piano music then?

CAPCOM Yes, we were trying to send you a  
 Nav update for the CSM target. And 7, your sextant star  
 check will not be visible after 26 plus 18 plus 00.

SC (garbled) 26 plus 18. Say, can you  
 work up words to the chorus?

CAPCOM Roger, standby.

CAPCOM Apollo 7, there were no co-aft star  
 available at that attitude.

SC Roger.

CAPCOM Apollo 7, Houston. Our nab loads are  
 in and verified, the computer is yours.

SC Roger, we've got it. Thank you.

SC And Jack, we'll be standing by for  
 when we go ahead and restow the cabin gap analyzers and  
 have it out of our way.

CAPCOM Roger.

CAPCOM Apollo 7, Houston, you can go ahead  
 and stow the cabin gap analyzers.

SC Roger, thank you. I'll give you one  
 final reading.

CAPCOM Okay.

SC Do you receive Jack, 210?

CAPCOM Say again.

SC 210 romeo degrees.

CAPCOM Roger, copy.

CAPCOM Apollo 7, Houston. Opposite omni.

CAPCOM Apollo 7, 1 minute to LOS.

END OF TAPE

PAO This is Apollo Control Houston 26 hours  
1 minute into the flight. A few minutes ago over the Canary  
we had a very brief conversation which went like this.

CAPCOM Apollo 7 Houston to Canary. Standing  
by.

SC Roger, we'll try to give the altitude  
now.

CAPCOM Roger. Could we get you to switch the  
biomed switch to the LMP?

SC Did you say to the LMP? You've got it.

CAPCOM Roger, thank you.

SC We're still in 8 hours of our prime  
time.

CAPCOM Roger.

PAO Over ascension the crew simply was ad-  
vised that we were standing by here. There was no conver-  
sation. They are now nearing Tananarive and shortly will  
be coming up on the first major use - the first use of the  
SPS, the service propulsion system, to make the first burn  
setting up their rendezvous. That burn is programed to  
take place between Tananarive and Carnarvon. I'm sorry it  
looks like most of it would take place over the Australian -  
in the Carnarvon circle of acquisition. We'll be back with  
the Tananarive pass. This is Apollo Control Houston.

END OF TAPE

PAO Apollo Control 26 hours 9 minutes. At  
Tananarive we had this conversation.  
CAPCOM Apollo 7, Houston to Tananarive. Stand-  
ing by.  
CAPCOM Apollo 7, Houston to Tananarive.  
SC Roger, Houston, how do you read?  
CAPCOM You're five by, we're standing by.  
SC (Garble)  
CAPCOM Roger.  
SC Houston, Texas tower just sighted west  
at 1, uh, 35¼ (Garble)  
CAPCOM Roger, we copy.  
SC (Dead Space)  
SC (Garble)  
CAPCOM Apollo 7, Houston, you're 1 minute LOS  
to Tananarive. We'll pick up ARIA 2 in about 2 minutes, have  
continuous coverage through Carnarvon.  
SC Roger (Garble)  
CAPCOM Roger, I couldn't copy that, Wally.  
SC Roger, I better go through (Garble)  
CAPCOM Okay.  
SC (Garble)  
COMM ARIA 2 go remote.  
CAPCOM Apollo 7, Houston to ARIA 2 standing by.  
CAPCOM Apollo 7, Houston to ARIA 2 standing by.  
SC (Garble)  
CAPCOM I read your copy.  
COMM ARIA 2 has AOS. ARIA 2 has AOS.  
SC (Garble)  
CAPCOM This is Apollo Control, Houston. The crew  
is over Mid-Indian Ocean. They're running through the check-  
list leading up to the first SPS burn. Presently programed  
4 minutes - uh 4-1/2 minutes from now. That would make it  
about 2:25 - 2:26, 26 hours 25 minutes into the mission.  
The burn will be, as we said, using the service propulsion  
system. It will be a 9.6-second burn. Now that might vary  
very slightly, but it will be on the order of 9 to 10 seconds.  
Uh, imparting differential velocity of 207 feet per second.  
The burn will be done in-plane, in other words, in the direc-  
tion of flight and the resultant apogee perigee should be  
122 by 197 or thereabout. Have the effect of raising the  
apogee. Our present orbital elements leading up to the burn  
are a perigee of 120 and apogee of 164. At 26 hours 21 min-  
utes into the flight, this is Apollo Control, Houston.

END OF TAPE.

PAO This is Apollo Control Houston 26 hours 23 minutes into the flight. We have acquired at Carnarvon and we are standing by. We are about 60 seconds away from the first burn of the service propulsion engine. This burn will be handled by the guidance and navigation system. Standing by for an ullage burn, 15 seconds away from the burn. The countdown from 10, 4, 3, 2, 1 and we are thrusting, the crew reports. Thrust cutoff and it looks like we had about 9 to 10 seconds. Wally Schirra's comment was that was a ride and a half. Walt Cunningham did most of the commentary - most of the advising us to what was going on during that time. So the service propulsion engine, which puts out something like 21,000 pounds of thrust, has passed its first major test in space. And now we have compared the data here, and it was a 10 second burn. It's been quiet from the spacecraft since the burn. We are looking at the data here, we got it by the Carnarvon station. The spacecraft, at the start of the burn, was about 300 miles due west of the Australian continent, about due west Perth. Donn Eisele has just checked in, he is happy with the burn in all respects. Here is the tape of the entire sequence as it occurred.

CAPCOM Apollo 7, Houston.  
 SC Roger Houston, just a minute.  
 CAPCOM Roger. I will give you that time hack  
 at T-2 minutes.  
 SC Roger.  
 CAPCOM 2, 1, mark. T-2 minutes.  
 SC Very good.  
 CAPCOM Adjust the AI scale 55.  
 SC 55.  
 CAPCOM L and B sets, A and B normal.  
 SC Okay, normal. Two is normal.  
 CAPCOM Hand control in on.  
 SC Roger, on.  
 CAPCOM Number 2, standing by for 30 seconds.  
 SC Roger and standing by for 30.  
 CAPCOM -60.  
 SC Roger.  
 CAPCOM 30 seconds. AMS, DELTA-V and R/O.  
 SC R/O.  
 CAPCOM Roger. Full charge in 15 seconds, you  
 getting when you have 5 seconds, Donn.  
 SC Roger, I'll hit the inner.  
 CAPCOM You have got one count on the fifth one.  
 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0.  
 SC Tested. Like a bomb, yabadabadoo.  
 Great, man that's like a ride and a half there.

CAPCOM                   Spacecraft control SPS.  
 SC                       (garble) for DELTA-V correction.  
 CAPCOM                   (garble) 1.2, burning up 1.9, and we  
 burnt aft 2.4.  
 CAPCOM                   Roger, copy that.  
 SC                       Roger. We are burning down to +4 balls  
 one, -4 ball three, +4 ball four. We are going to quit  
 here.  
 CAPCOM                   We copied real fine.  
 SC                       Recounter residuals -9.9.  
 CAPCOM                   Copy that.  
 SC                       Gimbal motors are all off. Circuit  
 breakers open (garble)  
 SC                       Houston, Apollo 7.  
 CAPCOM                   Go ahead.  
 SC                       Give you a plus one on that. That's  
 a real kick in the center. That really socks it to you.  
 CAPCOM                   Roger.  
 SC                       A very sudden start, that's like a  
 hydraulic catapult, almost like a steam cap.  
 CAPCOM                   Okay, I can't help you out any compared  
 to (garble)  
 SC                       This is Apollo 7, we are now drying off  
 our heads.  
 CAPCOM                   Roger (laughter).  
 CAPCOM                   You are about 30 seconds to LOS in  
 Carnarvon. We will pick you up in Hawaii in about 18 min-  
 utes.  
 SC                       Roger.  
 CAPCOM                   Everything looked real fine down here.  
 SC                       (garble) here. Surprised at the  
 (garble) start.  
 CAPCOM                   Roger.

END OF TAPE

COMM                   ARIA 3, go remote.  
CAPCOM                 Apollo 7, this is Houston. We will be  
monitoring through ARIA 3 at this time.  
PAO                    This is Apollo Control Houston 26 hours  
34 minutes into the flight. We may have some additional  
comm through an ARIA aircraft off the north coast of Australia, but it is really rather doubtful. The burn was completed, the burn at 26 hours 25 minutes into the flight. It was 10 seconds duration. It was the first burn of the service propulsion engine imparting a differential velocity of 207 feet per second. Our resultant apogee and perigee are 125.3 nautical miles, 125.3 nautical miles perigee, 196.1 nautical miles, 196.1 nautical miles apogee. Those are the new elements of the flight, and the burn was normal in all respects. This is Apollo Control Houston.

END OF TAPE

PAO This is Apollo Control Houston, 26 hours, 49 minutes into the flight. We have just acquired by the Hawaii station. We should have a good long pass here. We're on the 17 rev, it should carry us all the way over the Antigua station and will pick up again quickly at Ascension. The - I'm sure the most recent burn will be discussed, as we move across the States and let's find out what else. There is no conversation on the loop right now and - but we do have this opening conversation a few seconds ago as we moved in to Hawaii. Let's listen to it now.

CAPCOM Apollo 7 through Hawaii, standing by.  
 SC Roger, Jack, I just did what you told me, to look at the booster and I think I saw it, but it was a little hard to tell because of all the debris I've been picking up since sunrise. (Garble) and I'm sure that is it. Like I said there is a lot of trash and debris (garble) it's kind of hard to tell.

CAPCOM Okay, Roger, we copy that, Donn.

PAO That was Donn Eisele you heard saying that he thinks he saw the booster, which would be about 100 miles away according to our last check. Possible, I think certainly possible. We will leave the line open and continue the moderator.

SC Houston, Apollo 7 ready to read.

CAPCOM I read you (cut off).

CAPCOM Apollo 7, Houston.

SC Twenty-seven hours into the flight, we're fixin to take some pictures of the (garble).

CAPCOM Roger, I understand. Walt over Texas, in about 3 minutes we will have 3 NAV loads we would like to send you. There will be no MCC2 maneuver, and I'll pass you maneuver pad as soon as I get it.

SC Roger, waiting and ready. (garble)

END OF TAPE

CAPCOM Apollo 7 Houston. We would like to send you your three up posts. Would you go to accept, please.

SC Accept. We are in ACCEPT.

CAPCOM Roger copy. Coming up.

SC Apollo 7 proceeding down trip two direct Houston.

CAPCOM Roger, copy.

SC Hey Jack, I think we are going to pass Houston. Run outside and wave, we want to look at you for a second.

SC And when you get back in, Jack, why don't you have the E COM take a look at the performance of the fuel valves and if they are matching up our performance there.

CAPCOM Say again about the fuel cells, Walt.

SC How about having someone take a look at the - what they are doing with the spectrum performance purge. Looks a little low to me.

CAPCOM Okay, will do.

WC Garbled

CAPCOM Roger copy.

CAPCOM Apollo 7, Houston. I have your NSR pad that I'll give to you whenever you are ready.

SC Ready to copy, go.

CAPCOM Roger. NSR 028 00 5000 minus 00927 plus 00013 minus 01486 1536 plus 1139 01649 31599 minus 086 minus 040 008 NA NA NA 027 17 0000 plus 1959 minus 055534 1750 001 096 000. Remarks retrograde pitched up 55 degrees, head down.

SC Roger, say again after NA and it seems to me the CAPCOM's - there is a difference in purpose here - I think you're giving an NA for each line?

CAPCOM Roger. Let me read after the first the burn time - burn time is 0 plus 08 NA NA NA. Do you want - did you get copy now on 34 and on 43?

SC Did not.

CAPCOM Okay. 027 17 All Balls plus 1959 minus 05534 1750 001 096 000. I have a correction on the noun 33 time. That should be - the second should read 5600.

SC Roger, read back the following: NSR 028 00 5000 minus 00927 plus 00013 minus 01486 1536 plus 1139 01649 31599 minus 086 minus 040 008 no sextant star 027 17 0000 plus 1959 minus 05534 1750 001 096 000 retrograde pitched up 55 head down. Over.

CAPCOM Roger. I have the bore sight star for you. That's 045 plus 278 up 0.2 left.

SC Roger, star 45 plus 278 up and 0.2 left where is the decimal on the up?

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 27:03:30

116/2

CAPCOM 27.8.  
SC 27.8 thank you.  
SC (Garbled)  
CAPCOM 27.8.  
SC Thank you.  
SC (garbled) we completed a series of  
photographs from the (garbled) gulf coast and Houston  
(garbled)

END OF TAPE

CAPCOM Uh, Wally, you were a little bit garbled, I didn't catch you.

SC (Garble) Hawaiian Island, across the Gulf Coast, through Florida to Grand Bahama, our magazine petered about that time (Garble)

CAPCOM Alright, I've got a copy of that now.

SC (Garble)

CAPCOM Okay.

SC (Garble) 3-1/2 crossing that (Garble)

CAPCOM Apollo 7. All three loads are in their five peter here.

SC (Garble)

PAO This is Apollo Control, Houston, 27 hours 16 minutes into the flight. We still have a little ways to go in the Antigua circle, but it's questionable whether we will have any more COMM with the crew unless perhaps we pick them up again in Ascension. We've been looking here at the consumable chart on weights up to date, and actually these numbers are coming to us from Antigua. They read like this: the command module dry weight - that is if there were no other weights aboard: The present dry weight reading of it is 12 203 pounds; service module dry weight, 8630 pounds. We have some additional readings here on the various - uh the four quads. RCS quads, the reaction control system quads on the service module. They go like this: quad A, propellant weight - total propellant weight in pounds, 281; Quad b, 289 pounds; Quad C, 276 pounds; Quad D, 288 pounds. The SPS fuel propellant weight in the service module 3374 pounds and we just lost the chart. Stand by one until we find which channel it was switched to. I'm sorry, we've lost the chart. It's - we will locate it and come back to you and - . The crew has just been given a 60 seconds to LOS and in which they Rogered. This is Apollo - This is Apollo Control Houston.

END OF TAPE.

PAO This is Apollo Control Houston 27 hours  
27 minutes into the flight. Via Ascension we have had this  
conversation.  
CAPCOM Apollo 7 Houston through Ascension  
SC Roger, would you mark 20 clicks of  
water for CDR over (garbled)  
CAPCOM How many clicks of water?  
SC 20.  
CAPCOM 20, Roger copy. And on the fuel cell  
performance we are finding the fuel cells are right on  
nominal, however, we are going to continue to monitor the  
performance as we go along here.  
SC Roger. He's doing a pretty good job  
today.  
CAPCOM Thank you. You guys are, too.  
SC Jack, how are we doing on our fuel  
pressure?  
CAPCOM Could you say again, Walt?  
SC How are we doing on our fuel pressures?  
CAPCOM Okay, just a minute. We'll get it  
right to you.  
SC (garbled)  
CAPCOM Wally, on the RCS budget, we think we'll  
be right on nominal going in to TPI.  
SC Great.  
SC And Jack, okay, we've got our tape  
back now, I guess, or are we dumping it? If we use another  
32 pass again with no tape we are going to stuff up.  
CAPCOM Okay.  
CAPCOM Apollo 7 you are 1 minute LOS Ascension.  
We'll pick you up in Tananarive in 8 minutes.

END OF TAPE

PAO This is Apollo Control Houston 27 hours 51 minutes into the flight. We've got some conversation through Canary. We will play that for you in just a moment. Before we get to that, one or two other things. We've got some data here taken on the last pass over Ascension where we looked at the heart rate, some of the physical parameters on board the spacecraft and some of the specific physical parameters on the lunar module pilot, Walter Cunningham. They look like this. His mean heart rate was 66, his respirations were 21 per minute, and then as to the cabin, the cabin pressure at Ascension was 5.1 and very steady, cabin temperature 69 degrees Fahrenheit. I guess those are the pertinent readings on that chart. The S-IVB, the second stage coming on this second burn, which will be performed about 8 minutes from now over Carnarvon, second in a series of burns to bring off the rendezvous with the S-IVB. The present position on that S-IVB is about 80 miles trailing the command module, about 80 miles trailing it. It will reach a maximum separation according to our plots, of about 87 miles, just a minute or two before the burn. We have now the Tananarive conversation, let's play it.

CAPCOM Apollo 7, Houston through Tananarive. Apollo 7, Houston through Tananarive. Apollo 7, Houston through Tananarive.

CAPCOM Apollo 7, Houston through Tananarive. Tananarive M & O, CAPCOM. Tananarive M & O, Houston CAPCOM. Apollo 7, Houston through Tananarive. Apollo 7, Houston through Tananarive. Apollo 7, Houston. Tananarive, Houston CAPCOM.

TAN Houston CAPCOM, Tananarive M & O.  
CAPCOM Can you confirm if I am going out down there?

TAN Affirmative. We are tracking you 100 percent.

CAPCOM Thank you. Apollo 7, Houston.  
SC Roger, Apollo 7, reading you loud and clear. How are we, over.

CAPCOM You are fine now, Walt. We would like you to put up telemetry switch to command reset then normal. We missed the command going out of Ascension.

SC Roger. Telemetry reset then normal.  
CAPCOM Roger and you will on the A for the burn.

SC Roger.  
CAPCOM Apollo 7, Houston. You are 1 minute LOS to Tananarive. We will pick you up over Carnarvon in about 7 minutes.

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 27:51:20

119/2

SC  
CAPCOM  
SC  
CAPCOM

Roger. (garble)  
Say again.  
Will we be in touch during the burn?  
Yes sir, you will.

END OF TAPE

PAO This is Apollo Control Houston, 27 hours, 57 minutes into the flight. We have established contact by Carnarvon and we're about 2 minutes away from our second SPS burn today. Burn program for about 8 seconds, a differential velocity of 175 feet per second. We'll you in on the conversation, Jack Swigert is going to give the crew a mark of 2 minutes.

SC (garble)  
CAPCOM Apollo 7, Houston.  
SC Roger, standby (garble)  
CAPCOM Apollo 7, Houston. Reading you 5 by, I'll give you a mark in 2 minutes.

SC Roger.  
PAO We've just given a mark of T-2 minutes. Cunningham advises he's standing by for a 30 second mark. This burn is programed to have the effect on the orbit resulting, should be 114 by 154 nautical miles. We're 1 minute away from the burn. 8, 7, 6, 5, 4, 3, 2, 1 and we are thrusting, Schirra says. Pressures in the service propulsion engine are quite good and I think we heard thrust off. And as the pitch and yaw thrusters are shut-down, they are reported by the crew. SPS burn, according to the chart here began at 28 hours, 1 minute, 6 seconds into the flight. It ended at 28 hours, 1 minute, 14 seconds, an 8 second burn. The other burn set us up on a circular plane which has carried us around to a point where we are now firing the booster about 85 miles. Now we will begin closing and at about 1 hour, 23 minutes from now, at 29 hours, 23 minutes we should begin the terminal phase of initiation burn, which will be the final burn on bringing us from a point we're on a plane now running about 8 miles under the line on the line of flight of the booster and this will swing us up to hopefully the rendezvous with the booster, coming up just slightly in front of it, we estimate and about 30 hours into the flight. Here is the entire tape through the second burn sequence. We'll play it for you now.

CAPCOM 3, 2, 1, mark. T-2 minutes.  
CAPCOM SCIA scale 55. (garble) A and B normal.  
SC A normal, B normal.  
CAPCOM End controllers on. Standing by for  
30 seconds.  
CAPCOM Minus 1 minute.  
SC Roger, 1 minute. Delta-V AUTO.  
CAPCOM Four Charlie, 15 seconds.  
SC Roger, (garble) at the count of 4  
(gargle).

CAPCOM 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0.  
 SC Tested. Burn complete, all 4 balls  
 (garble).  
 CAPCOM Roger, copy.  
 CAPCOM DELTA-V thrust AV off.  
 SC Roger, pitch end off, yaw one off,  
 pitch two off, yaw two off.  
 SC Residuals are + 4 balls one + 5 balls  
 + 4 balls two and we burnt about a total of 6 feet per  
 second.  
 CAPCOM Roger, copy.  
 SC Residuals -9.9.  
 CAPCOM Okay, copy that.  
 SC (garble)  
 CAPCOM Same exact number.  
 SC (garble)  
 SC Houston, Apollo 7, Wish to commence  
 battery charging on battery A, I would say a curve right  
 now of about 2.3.  
 CAPCOM Roger.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 282316 121/1

PAO This is Apollo Control, Houston, 28 hours 23 minutes into the flight. Hawaii should acquire momentarily and we will be listening for that pass which will take us across the states. Early today we were talking about a chart which got unlatched in the middle of our transmission as we are discussing onboard weights. we've since run that chart down and of interest to us on it and I hope to you will be one way the current total Command Service Module weight, which is - carried at 30 980 pounds. Now we have contact with the crew, now let's find out what's going there.

HAW Apollo 7 through Hawaii, standing by.

CAPCOM Thank you.

SC Roger, I got you..(garble) the thing is really taking in there, right on the money.

CAPCOM Roger, you're fading in and out, but I think I got it. You're tracking okay.

SC Pop and seal two-way lock, vent and drain.  
END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 28:11:23 122/1

COMM	ARIA go remote.
CAPCOM	Apollo 7, Houston to ARIA 3 standing by.
SC	Roger. Read you.
CAPCOM	Apollo 7, Houston to Guam, standing by.
CAPCOM	Apollo 7, Houston 1 minute LOS Guam;
Hawaii in 8 minutes.	
SC	(Garble)
CAPCOM	Not too bad.

END OF TAPE

SC Crew to Apollo 7.  
CAPCOM Apollo 7, Houston go ahead.  
SC Why can't we get the record for here  
Donn, for a lot of comments back to the ground mode?  
SC (garble) Are you recording this down  
there?  
CAPCOM Are we recording?  
SC Roger, I'm almost 3 minutes into this  
TPI solution here and it seems like quite a while, I was  
wondering when you are planning to take it off.  
CAPCOM Roger, Donn. We're trying to mark the  
uh, polar plot along with you here as you go through the  
solution.  
SC Whenever we call K three, four or some  
such thing you can expect it to drop the tracking or pull  
off some and then we will return after you get back to the  
basic program, for instance, the TPI solution just came  
back and before we got it (garbled) target adapter also I  
do not have (garbled)  
CAPCOM Roger - Apollo 7 Houston  
SC Roger  
CAPCOM Roger, Walt, we'll have a clean tape  
for you to record the rendezvous on that Antigua LOS which  
occurs about 28.54.  
SC Roger, 28.54  
CAPCOM Roger  
PAO This is Apollo Control Houston 28 hours,  
47 minutes into the flight and we are about half way through  
perhaps the longest and quietest state-side pass in our  
memory. The crew is working on the rendezvous, they are  
rapidly approaching the terminal phase of it and we can  
only assume that accounts for the quiet. We have the line  
open and we'll just leave it open and continue to monitor  
the situation whatever might develop

END OF TAPE

CAPCOM Apollo 7 Houston. I have your TPI update pad I will give you when you are ready to copy.

SC Ready to copy, go.

CAPCOM Roger. 029 183400 plus 150 plus 019 minus 075 168/46 forward 020/11 right 003/03 down 075/08 01960 minus 0729 02240 35950 133 trunion check. The GET in midcourse 029 plus 23 plus 00. Remarks, you will be flat at TPI.

SC Roger, that's flat at TPI midcourse. 029 plus 23 plus 00 TPI update follows: 029 183400 plus 150 plus 019 minus 075 168 46 forward 020 11 right 003 03 down 075 08 01960 minus 0729 minus 0240 35950 133 on the trunion. Over.

CAPCOM Roger. Your elevation minus 5 minutes I copy, it should be 02240.

SC Is that - oh - 02240.

CAPCOM Roger. Everything else correct. I'll give you a DELTA-V cutoff in a minute.

CAPCOM Your DELTA-V cutoff will be 90.

SC 90 copy.

CAPCOM Apollo 7 Houston.

SC Go ahead.

CAPCOM Roger, Walt, you have a clean tape on the DSC. You should have 3 switches in proper position there. Telemetry input should be high, your former rewind switch should be off, your up telemetry switch - command reset to normal. When you want to record then cycle the forward rewind switch to FORWARD then OFF.

SC Roger, but we don't want to be recording at DCM HIGH. yet we want to still get all the RCS burns on HIGH tape. Over.

CAPCOM Okay, standby.

CAPCOM Okay, Apollo 7, you are GO the way you want to do it. We'll have a mixed dump, but that will be okay.

SC Roger. Do you understand that I'll be going - I'll be stopping the tape and going to HIGH PITCH rate for each of the RCS burns and after the last RCS burn I'll run at HIGH PITCH rate right on into the rendezvous till the tape is up.

CAPCOM Roger, we understand that.

PAO This is Apollo Control Houston. We are out of range of the spacecraft and at 28 hours 56 minutes into the flight that's our situation.

END OF TAPE

CAPCOM Apollo 7, Houston through Ascension,  
standing by.  
SC Roger.  
CAPCOM Apollo 7, Houston. Apollo 7, Houston.  
SC Go ahead, Houston.  
CAPCOM Just for your information only, the  
tracking data across the states indicates that TPI could  
occur about 30 seconds earlier. All our other values re-  
main unchanged.  
SC Roger. We show 16 + 45 on our (garble)  
CAPCOM Roger.  
SC The (garble) now is 7, but you can  
mark it 11.  
CAPCOM Okay, it's 28. I'll give you 1030 or  
do you want 10?  
SC (garble)  
CAPCOM 35 seconds, 10 seconds, 3, 2. 1, and  
marking.  
SC (garble)  
CAPCOM Apollo 7, Houston. Tananarive in 10  
minutes.

END OF TAPE

PAO                    This is Apollo Control, Houston 29 hours 17 minutes into the flight. The Spacecraft is over the southern tip of Africa and we are about to acquire via Tananarive whether there will be any conversation, we don't know. We have gotten some numbers on the first two burns using the service propulsion system - the big engine and they go as follows: the first burn performed earlier in the day used 674 pounds of propellant. That's a combination of fuel and oxidizer. Again, 674 pounds in the first burn. In the second burn, 565 pounds of propellant used and the combination leaves in, in a, leaves in the service propulsion system propellant tanks 8235 pounds remaining. Now additional burns have been done throughout the night and throughout the day with the service module reaction control system thrusters and up until this point we have logged the total usage of 262 pounds, 262 pounds of propellant in the RCS and that leaves a remainder of 1045 pounds. Tananarive should acquire momentarily and when it does we will come into that conversation. In about 5 minutes - or more precisely at 29 hours 23 minutes into the mission, 4 minutes from now, the spacecraft should be trailing the S-IVB by about 12 miles and it should be running about 8 miles below the S-IVB and at that point, approximately 29 hours 23 minutes they will begin terminal phase initiation. There's the first call going out to 7 via Tananarive.

PAO                    This is Apollo Control. I don't see any point in deafening everybody in the news center. We will come back as soon as we get a cleaner signal. Out at 29 hours 20 minutes.

END OF TAPE

PAO This is Apollo Control Houston, 29 hours, 22 minutes into the flight. We have a little tape by Tananarive; it is unreadable but we'll let you hear it anyway, and if you can understand what they're saying, you're better than a lot of people that tried to hear it. We did pick out one or two words on it that the crew had gone ahead with the TPI, the Terminal Phase Initiation, of the rendezvous situation and they are using a program which called 4 TPI at 29 hours, 17 minutes; earlier I gave you 29 hours and 23 minutes; I want to correct that. They did begin the TPI burn at 29 hours, 17 minutes. We'll all know when they get to Carnarvon how everything came out. Here's that Tananarive tape.

CAPCOM Apollo 7, Houston through Tananarive; standing by.

SC (garble) Three hours (garble) retro

CAPCOM Walt, we got real bad com here at Tananarive; we could read that you were saying something but we can't make it out.

SC Okay; we'll all do what you say. (garble)  
Ignition -

CAPCOM We couldn't make it out - we made out the word PPI and that was all. Can you confirm that you have burned PPI?

SC That is affirmative.

CAPCOM Alright; we got it. Thank you.

SC Power - 3, 2, 1, mark.

CAPCOM 7, we are 1 minute LOS Tananarive; we'll pick you up for a very short pass at Carnarvon in 9 minutes.

END OF TAPE

PAO                      This is Apollo Control Houston, 29 hours 32 minutes into the flight. In one small historical note perhaps worth mentioning, it was nearly 3 years ago, lacking 3 years by 2 months, that the same spacecraft commander Wally Schirra, then in command of Gemini 6, carried out the world's first rendezvous over perhaps very nearly the exact same piece of real estate when Gemini 6 pulled up in front of Gemini 7. That rendezvous took place over the Islands just north to northwest of Australia, and apparently if everything continues to go as well as it has in this maneuver, Apollo 7 will pull up in front of the S4B in almost precisely the same location. It will be another 11 minutes before we get any definitive information probably on just how the maneuvers go and that information should come to us through Guam. This is Apollo Control, Houston.

END OF TAPE

PAO Apollo Control, Houston here, 29 hours 45 minutes into the flight, and we've been having some power difficulties in building 1 today as opposed to building 30 yesterday. Everything back - is up now and operating again. I understand even the phones are working. They were out for about 5 minutes. We've got a little tape from Canarvon then we'll patch right into the Guam area which is about to acquire. Here's the tape and then we'll go into a live pass across Guam.

CAPCOM Apollo 7 Houston to Canarvon, standing by.

SC (Garble)

CAPCOM Seven 1 minute LOS; Guam in 7 minutes.

SC Roger, coming up the pike.

CAPCOM Roger.

SC (Garble) have been corrected.

CAPCOM Be there in 5 minutes.

PAO Apollo Control here. The program shows that they should be in their breaking mode about 1 mile out at this point. We have not heard from them, We do have some data coming in from Guam that shows them approximately 1 mile from target. We just heard Gene Cernan comment. He's been plotting in here that, uh - his statement was "they're right on the pike." We'll monitor the open line.

PAO I understand they're inside of a mile and braking. Braking like hell as one flight controller just put it.

PAO A lot of thruster activity showing up on our charts here. As we look at the RCS quads using all four of them here now again. We're getting some educated guesses that they ought to be on the order of a half mile from the S-IVB. They have not said anything as we move through the Guam area. Still got about half of it to go. Another 2 or 3 minutes. Earlier, we gave you a - prior to this vital maneuver, we showed 1045 pounds of propellant remaining in the RCS quads. All four quads now are down the range of about 180 to 190. All of them with the exception of one, under 200 pounds, and all four quads very active. So, we've got something - we've used about 250 pounds of RCS fuel, it would appear, on this maneuver to date, which is pretty conservative usage.

CAPCOM Apollo 7 Houston, 1 minute LOS Guam; Hawaii in 8 minutes.

SC We're closing, we're at about 7 or 8 feet. We're just about locked up in this loop.

CAPCOM Real fine, Wally.

SC (Garble)

CAPCOM Real fine.

PAO                      This is Houston, uh, you heard Schirra say he was about 400 feet away from the target, braking at 50 to 60 feet per second, and it seemed to be going very nicely. The time of that last transmission of the spacecraft was at a latitude of 20 degrees North, a longitude of a 100 and about 150 degrees East, 150 East, 20 North. Let's make that 155 East and 20 North. 155 East, 20 North. We have lost signal now by Guam. We don't know what the situation was with the S-IVB, what it's attitude was. We'll know more in about 8 minutes when we get to Hawaii. At 29 hours 53 minutes into the flight, this Apollo Control, Houston.

END OF TAPE

PAO Apollo Control Houston here. 29 hours 59 minutes and momentarily we should acquire the spacecraft via Hawaii and hear more about how the rendezvous went. Here goes the first call.

SC Go ahead, Roger. We're in about 150 yards (garble) random direction.

CAPCOM Roger, understand.

SC (garble)

CAPCOM We have got some poor comm this time, Walt. We will stand by a little bit until we get in a little closer.

SC (garble) station keeping

CAPCOM Roger, we copy station keeping.

CAPCOM Apollo 7, Houston. How do you read now?

SC Loud and clear, Jack. Go ahead.

CAPCOM Okay, you are real fine now Walt, we have just switched in.

SC Okay, this is Donn. Everything was pretty normal as far as the solutions were concerned. We had a DSKY solution of 3.6 to the midcourse, and Wally had a 1.7 solution on his charts. We split the difference and took 2 feet per second aft and that slid us right in there. Except for a little bit of cross plane correction that Wally had to make at the tail end, we were normal right up the pipes. According to noun 40's estimates of fuel here, we used 76 feet per second, however, noun 40 integrates velocity even when you are not thrusting, so I think we used somewhat less than that, probably only 60 to 65 feet per second.

CAPCOM Roger, copy that.

SC Roger. PCM high data, we had a loss of contact with the S-IVB just prior to TPI and in the confusion here, I didn't get high bit rate data, the TPI burn. We had high bit rate data in the midcourse burn and final RCS thrusting on in.

CAPCOM Okay, copy that. Walt, I have your separation pad whenever you are ready to copy that.

SC Wait one.

CAPCOM Apollo 7, Houston. How close are you now?

SC Pretty close, about 70 feet, it's tumbling rather wildly, so we are just going to have to stay away from it.

CAPCOM Roger, understand.

SC Ready to copy.

CAPCOM Okay, separation task 03020 all balls.

CAPCOM Noun 82, NA 1618 + 12210002030847,  
noun 48 NA 0 + 05. Sextant triangle NA, noun 34 NA, noun  
43 NA 359310000, remarks: It will be a posigrade burn,  
BEF, heads down using -X thrusters, the burn will take  
place in front of the booster.

SC The SLA panel on the opposite side of  
one large sphere sticking out of the engine. It does not  
have a flashing light. The others are working fine.

CAPCOM Roger, copy.

SC What were the minutes on the GETI? I  
missed the minutes.

CAPCOM Okay. Minutes on GETI 20.

SC Roger. Read that fine - you're a little  
garbled at times. Check close, set burns 0302000001618 plus

12210002030847005. All the way down to roll, pitch and yaw  
359310000. Over.

CAPCOM Rog, that's correct. Did you copy the  
remarks?

SC Roger. Possibly BEF heads down minus  
X-thrusters for the power booster.

CAPCOM Roger. And Walt, on your charging of  
Battery A -

SC Say again.

CAPCOM On charging Battery A, we'd like you not  
to stop charging -

SC Say again, Jack.

CAPCOM Apollo 7, you read Houston.

SC Roger. I read you. How me?

CAPCOM You're fine. Fire.

SC What was your last question after my  
last readback?

CAPCOM We do not want you to discontinue charging  
Battery A at point 6 X. We'll give you a cutoff charge.

SC Roger. I'll probably be all right.

CAPCOM You'll continue charging. We'll give you  
a cutoff time.

SC I'll be standing by for your cutoff later.

CAPCOM Roger.

END OF TAPE

CAPCOM Apollo 7 Houston  
SC Go ahead, Houston  
CAPCOM All right, we feel you're at the end of  
your tape on your DSC, if you concur, we'll take command  
and we'll dump it and you can go back to your normal switch  
configuration.

SC Roger, we concur  
CAPCOM Okay, we're gonna dump.  
SC Houston, Apollo 7  
CAPCOM Go ahead, Seven  
SC It's a real nice setup on the ground  
your solution to that was pretty close, you did a real good  
job.

CAPCOM You all did a real fine job, too.

SC Same here.

CAPCOM That's what we call team work.

SC Roger, that's a fact.

CAPCOM Hey, Apollo 7

SC All says go

CAP COM Apollo, go

END OF TAPE

PAO This is Apollo Control Houston, 30 hours, 20 minutes into the flight. And only a few minutes ago, we were within contact by the Texas station with Apollo 7 flight Crew Operations Director Deke Slayton. He had a conversation with the crew regarding - he congratulated them on the performance of the rendezvous today and he also discussed the future use of the television camera. Here is the recording of that conversation.

CAPCOM Apollo 7, opposite OMNI.  
CAPCOM Apollo 7; CAPCOM.  
SC What you say there.  
CAPCOM Congratulations on a good job up there.  
SC Thank you; we're (garble) today.  
CAPCOM Yeah, listen; we need a commitment on  
rev 45 in some relative to TV from here Walt.  
SC Roger; we got all of that. We were awfully  
busy up here and behind on the (garble) and we had to cut you  
off.  
CAPCOM Roger. Okay. And you are okay from 45  
on, is that correct?  
SC That's affirmative.  
CAPCOM Okay, fine, thank you.  
SC Real job but we did them all within the  
period and the range really came up beautiful today.  
CAPCOM Roger. Okay, have fun. We will see you  
later.  
SC Okay, thank you.  
CAPCOM Apollo 7, Houston. You are 1 minute LOS  
Texas; we will pick you up at Tananarive in 34 minutes.  
SC Ready to go.  
CAPCOM Roger.  
SC I know it will take a long time for you  
to dump that tape; give us a call if this (garble)  
capcom Okay, 7, it's gonna take a little while  
to get the tape dumped - let us know when it is ready and  
we'll tell you when you can use it again.

PAO This is Apollo 7 Houston, 30 hours, 22 minutes into the flight; that last conversation primarily between Don Slayton and Wally Schirra. In the course of it, if you followed it, the Apollo 7 crew commander agreed and committed to the use of the television camera from Rev 45 on as per flight plan. Earlier in the day there had been some discussion it was scrubbed as an event leading up to the rendezvous which was carried out most successfully in the last few Revs and we will not attempt any television tomorrow because of the sleep cycle. We are next scheduled for that experiment on Rev 45 which will be Monday morning. At 30 hours and 23 minutes into the flight, this is Apollo Control Houston.

END OF TAPE

PAO This is Apollo Control 30 hours 52 minutes. Apollo 7 is nearing acquisition at Tananarive. We will monitor through that pass.

CAPCOM Apollo 7, Houston through Tananarive.

SC ... Roger.

CAPCOM Roger, your voice is pretty good this time. Between your chow there, I have got a block data number 4 to give you.

SC (Garbled)

CAPCOM Say again. You are ready to copy?

SC Go ahead.

CAPCOM Roger. Zero two one dash four Alpha. Plus two six zero minus one six three three zero three two plus five three plus four two four nine three three zero two two dash three Bravo plus three one seven plus one three eight eight zero three four plus one three plus five four four five two three zero two three dash three Alpha plus two nine five plus one three eight five zero three five plus four nine plus two seven four seven seven five zero two four dash three Bravo plus two three three plus one three five six zero three seven plus two four plus two eight five zero one three zero two five dash Alpha Charlie minus zero two one. Wait one, skipped GET zero three eight plus one four plus one one four three four two. (Pause) Apollo 7, Houston. On your longitude for area 25 Alpha Charlie.

SC In 25 Alpha Charlie, I got lat minus zero two one and no longitude.

CAPCOM Roger. Longitude minus zero one eight zero. Area zero two six dash Alpha Charlie plus zero nine zero minus zero two four zero zero three nine plus four nine plus two seven four one five nine. Houston over.

SC Roger. Houston zero two one dash four Alpha plus two six zero minus one six three three zero two two (garbled) four nine three three zero two two dash three Bravo and I didn't get plus or minus on this. Three one seven plus one three eight eight (garbled) plus one three (garbled) four five two three.

CAPCOM Roger. Your latitude is (garbled)

SC two three dash three Alpha plus two nine five plus one three eight five two zero five plus four nine plus two seven plus seven seven five three zero two four dash three Charlie (garbled) plus one three five six four five seven seven (garbled) three zero two five dash Alpha Charlie minus zero two one minus zero one eight (garbled) one one (garbled) Alpha Charlie plus four nine zero minus zero (garbled) plus four nine plus three seven (garbled) over.

CAPCOM Roger, your latitude on area 22 three  
Bravo is approximately one seven.

SC Everything looks good.

CAPCOM Everything up correct. Just about LOS  
there, Wally. You and Donn, we would like to have you do  
some troubleshooting on the biomed harness there when you  
get a chance and maybe we can pick it up over Mercury.

SC Roger, (garbled)

CAPCOM Roger.

SC (garble) around. Tananarive I would like to  
hear how much RCS propellant we have left ...

CAPCOM Affirmative. Go.

SC ...thrusters?

CAPCOM Apollo 7, Houston.

PAO We have LOS at Tananarive. This is  
Apollo Control 31 hours 1 minute.

END OF TAPE

PAO This is Apollo Control 31 hours 41 minutes into the mission. Apollo 7 is within range of the tracking ship Huntsville now. We have tape of the passes at the Mercury and the Hawaii station prior to this. We'll start with the tape at Mercury and play catchup.

CAPCOM Apollo 7, Houston. Apollo 7, Houston, I have a flight plan update.

SC Roger. Late one? Should we also use the flight plan or use the log book?

CAPCOM Say again, Walt.

SC Did you plan to use the flight plan or use the log book?

CAPCOM No, it's just one line. That time 3330, the fuel pump purge of the 02 only.

SC Check the 02 only of the fuel pump purge it has to be checked at a specified time. Right?

CAPCOM Roger. It's at the same time, 3330.

SC It's duly noted. A roundup to date on our window status, the center hatch window now is pretty badly blurred on the useful area to detect the horizon.

CAPCOM Roger here. You say it's hard to detect the horizon?

SC I say that it is just barely usable for detecting the horizon but Walt says there is nothing to it. It would be usable for back angles and that's about all.

CAPCOM Roger.

SC My left window, what I call my number 1 window.

CAPCOM Roger.

SC Is now developing the film on the inner surface of the outer pane. Although it's not too bad at this point, but I would not shoot pictures through it.

CAPCOM Roger, copy.

SC I'll go on around the cockpit, the number 2 window, the one we use to rendezvous is beautiful. It is interesting to note small hairs like a fuzz around the perimeter of all the windows that apparently just developed as a sort of belt. It's about three-quarters of an inch to an inch long.

CAPCOM Roger. Is that on all windows or just the -

SC That's on all windows and now I'm on number 4 window. It does have the same dust and it's getting a little bit cloudy but only around the perimeter on the upper right corner. As you think of the upper and lower (garble).

SC It looks like the number 4 window may have cleared out after a few more days.

CAPCOM Roger. Looks like number 4 window may have cleared out after 3 or 4 more days, huh?

SC Roger. Number 5 I had swab it now - it has a slight film on the inner surface. Understand, filing for IFR.

CAPCOM Yeah, sounds like it.

SC Actually, we'll keep you updated on this and we'll discuss where we're going.

CAPCOM Roger.

SC Affirmative. The target was visually fixed during the final stage of braking about midway between Regulus and Sirius on the line drawn between the two stars.

CAPCOM Have you, copy.

SC And it's a very traumatic experience.

CAPCOM Sounds like it was a good one.

SC We arranged for an update and switched our channels on awhile ago to get a hack on our fuel remaining. Just an academic theory.

CAPCOM All set.

SC The pass on and then you get fixed for subsequent spacecraft. On channel 352, the QD is up to the waste water servicing valve. That QD, after it's installed, provides interference with storage area D8 such that D8 cannot be opened and gotten into without taking down the QD again.

CAPCOM Roger.

SC There's something I think we ought to make note of, Ron. The lightweight headsets are preferable to the comm carriers due to the comfort of not having anything on your head but the plugs in our ears. We're using the plastic plugs rather than the rubber type nipples.

CAPCOM You're using your own molded plastic plugs, right?

SC That's affirm.

CAPCOM From our calculations on the RCS fuel down there, it looks like it was pretty much nominal. We used the nominal plus a portion of the reserve. We're about right on, we're standing by for a further temperature stabilization to get a more accurate picture of it.

SC Roger.

CAPCOM On your tape recorder, as you know, we've recorded a lot of high bit rate and not too many places to dump it. It's going to take about 3 revs. So you'll have no voice recording on your tape recorder for awhile. We'll let you know when it's available for use again.

SC Roger.

CAPCOM Wally, we'd like to get an indication of how you're feeling up there and if the activity did you any good. Apollo 7, Houston. About 1 minute to LOS Guam.

SC Roger. I didn't give an answer on the  
 actifed or aspirin. Cutoff.  
 CAPCOM Roger, I need to get an idea of how you  
 feel then if the actifed was working. Do you have any  
 further symptoms?  
 SC My mucous is much thicker and since I  
 probably should continue on actifed and use aspirin when I'm  
 not sleeping.  
 CAPCOM Apollo 7, Houston through Hawaii.  
 SC Roger, we're recording you on (garble)  
 CAPCOM Say again.  
 SC Roger, we're recording you on (garble)  
 CAPCOM Understand.  
 SC Go ahead, we're standing by.  
 CAPCOM Wall, we're just a little curious if you  
 have had any indications of a fever at all?  
 SC my temperature is normal and it just  
 appears that the nasal passage is very full. I haven't been  
 coughing - there's nothing in the lungs.  
 CAPCOM Roger.  
 SC (garble) dry it up if I could and a decongestant  
 is my best bet.  
 CAPCOM Wally, we would like for you to go  
 ahead and stay on the actifed and continue with the aspirin  
 then.  
 SC Roger. What's the frequency of (garble)  
 CAPCOM Standby.  
 SC Say again.  
 CAPCOM The actifed once every 8 hours.  
 SC Roger.  
 CAPCOM Wally, aspirin can be as often as 2 every  
 4 hours if desired.  
 SC Roger. Thank you for your help. I'll  
 follow that schedule til we land, we run out or I feel better.  
 CAPCOM Pretty hard to read that time, Wall.  
 SC Roger. I'll follow that schedule until  
 we land, run out or feel better.  
 CAPCOM Roger. Concur.  
 HTV Huntsville LOS.  
 CAPCOM Apollo 7, Houston. one minute to LOS  
 and then we'll pick you up Tananarive at 32 plus 27.  
 SC Roger. That's 32 plus 27?  
 CAPCOM That is affirmative.  
 PAO Apollo Control, 31 hours 50 minutes. The  
 next station to acquire the spacecraft will be Tananarive at  
 32 hours 27 minutes.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 322700 135/1

PAO This is Apollo Control at 32 hours, 27 minutes. Apollo 7 is in it's 21st revolution coming up now on the Tananarive Tracking Station. We'll listen in through this pass.

CAPCOM Apollo 7, Houston. Roger. Apollo 7, Houston. Apollo 7, Houston?

SC Apollo here; go ahead.

CAPCOM Roger. We request you terminate battery A charging at .4 AMP.

SC Roger; .4, over.

CAPCOM Roger; we showed .47 AMP at Guaymas, Request onboard reout this time.

SC (garble) We might check on my telemetry now.

CAPCOM That's negative telemetry on that, Tananarive.

SC Roger; we thought the (garble) pull back on (garble) at Tananarive addition. We'll (garble) for that pass and miss entirely.

CAPCOM Roger. We should be able to get some thing on the mercury at about 32 plus 50.

SC Failed to get your answer; we're over the hill.

CAPCOM Say again.

SC Apollo is (garble) about .5 AMP.

CAPCOM Roger; copy .5. Apollo 7, Houston. You might be advised that our last check on the voice quality at the DSC is still very good.

SC Heard. Houston; Apollo 7.

CAPCOM Houston, go.

CAPCOM Houston, go.

SC Roger; we have started our EPS redundant component check about 5 minutes ago and our product (garble) pressure 2, the AC prior to setting (garble) here is OFF and at that time I had half AMP (garble) and (garble) and reset (garble)

CAPCOM Roger; understand. Will you turn the compressor 1 off, you also had a main bus A and B undervoltage and it read okay.

SC Affirmative.

SC (garble) power breaking. I had 2 on at (garble)

CAPCOM Say again, Walt.

SC Copy.

CAPCOM Negative on Schirra's statement.

SC Add 21 at once and up on the main pump A and main bus B (garble) reading 27 and a half volts on the (garble) pump.

CAPCOM Roger; understand.

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 322700 135/2

SC And where is the next place where I'll  
be able to turn my (garble) A and B?

CAPCOM Roger. We should get that at Mercury,  
we pick them up at 32 plus 50.

SC Roger, thank you.

PAO LOS at Tananarive now. The Tracking Ship  
Mercury will acquire at 32 hours, 50 minutes. This is Apollo  
Control at 32 hours, 36 minutes.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 325030 136/1

PAO This is Apollo Control, 32 hours, 50 minutes into the mission. Apollo 7 is about to acquire at the Mercury Tracking Ship.

SC Houston, Apollo 7; how do you read?

CAPCOM Apollo 7, Houston. Loud and clear.

SC Did you get somebody standing by; we would like to check our main oxygen rate.

CAPCOM Roger, go. We're receiving the data.

SC Okay.

CAPCOM Stand by; we just lost data.

SC Stand by; did you get that one?

CAPCOM The data is back in; continue.

SC Main flight B is out closed.

CAPCOM Okay, we're reading 10 - 10.

SC Roger; we are reading 102.

CAPCOM That is affirmative; 102.

SC (garble) now is back on. Pump A is out

(garble)

CAPCOM Apollo 7, Houston.

SC Standing by for your reading on the other valve.

CAPCOM Roger, we are reading 105.

SC Saying 105, thank you. Again back on.

CAPCOM Roger.

SC Are you reading (garble) at (garble) now?

CAPCOM Apollo 7, Houston; affirmative. It looks good now. We'll work on Donn when he wakes up.

SC Exercising right now.

SC Very good.

CAPCOM The CDR exercising you say?

SC All exercising. I think you ought to pass that on to Pete.

CAPCOM I'll call him on the phone. Apollo 7, Houston; number one surgeon certainly appreciates your efforts there.

SC Roger; the lead is quite (garble)

CAPCOM Roger; we understand.

SC (garble) This is Apollo 7, the ECS redundant component check is complete; we did not flow secondary radiators.

CAPCOM Roger, understand did not close secondary radiators.

SC Also wonder if how long we want to go with the preliminary boiler without trying it and possibly reservicing it.

CAPCOM Roger; looks like right now we're going to work on that maybe the next shift; I don't know. Or tomorrow. You have 1 minute to LOS; be advised turn up your S band volume at 33 plus 09. We will have a S band pass over

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 325030 136/2

Hawaii.

SC 33 plus 09. (garble) go. Agreed to do  
the BPF?

CAPCOM I'm getting an update on the time and  
I'll pass it up later.

SC Roger; what is the time for the next TV  
pass and turn on S band volume there would be a lock on, on  
the light.

CAPCOM Roger. Concur.

PAO This is Apollo Control. Mercury has LOS  
now. Hawaii will acquire at 33 - 8. We're attempting to  
get the heart rates on Wally Schirra during that exercise.  
If you will stand by, we'll come up with those in just a  
minute.

END OF TAPE

PAO                      This is Apollo Control 33 hours 4 minutes into the mission. Flight Surgeon John Zeiglschmid reports that Wally Schirra was already exercising as they came into the pass and he started monitoring with rates of 88 and those rates climbed right up to 96 as he continued to use the inflight exerciser. He reports Captain Schirra's normal base heart rates at 65 to 75. At 33 hours 5 minutes this is Mission Control.

END OF TAPE

PAO This is Apollo Control 33 hours 8 minutes and the Hawaii station is about to acquire Apollo 7. Tracking ship Huntsville has a slight bit of overlapping coverage on this pass. We will stand by now.

CAPCOM Apollo 7, Houston. Apollo 7, Houston.

SC Roger. Am I clear, understand?

CAPCOM Hey, sounds beautiful.

SC Really does. Would you give us ascending node update? Chart update?

CAPCOM Roger. Stand by. I don't have one right now. Give you one shortly.

SC No rush.

CAPCOM And be advised on the TV usage about 71 plus four zero.

SC Okay.

CAPCOM Apollo 7, Houston. Here is your little update.

SC Go ahead Houston.

CAPCOM Roger. Rev 21, GET is three two plus four zero plus zero nine. Longitude seven seven point one east right Ascension zero six one eight.

SC Roger, we have that. Thank you.

CAPCOM Roger.  
(Pause)

CAPCOM Apollo 7, Houston. (Pause) Apollo 7, Houston. We will have a handover to Huntsville at 33 plus 16 so standby for F-band volume decrease slightly before that.

HAW Hawaii here, Apollo 7.

SC Houston, Apollo 7.

CAPCOM Houston, go. Wally, did you copy that 33 16 we will switch to Huntsville? And that band will break lock--

SC Houston, Apollo 7.

CAPCOM Houston. Do you - (garbled). I want to know can you give me a VHF? Apollo 7, Houston.

SC Houston, Apollo 7.

CAPCOM Apollo 7, Houston.  
(garbled)

CAPCOM Apollo 7, Houston.

SC Come in Huntsville.

CAPCOM Roger, we are back in VHF again. Commence your last (garble) on S-band.

SC Roger, we have had LSC back on ...

CAPCOM Roger, we confirm.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 331830

139/1

PAO Apollo 7, Houston, 1 minute LOS, Tananarive at 34 + 03. The Huntsville has LOS now. This twenty first revolution is too far east for the Redstone to acquire Apollo 7. So we will be out of range of any tracking stations - that is Apollo 7 comes down across the South Pacific, South America, and the South Atlantic Ocean. And the next station to acquire will be Tananarive at 34 hours, 3 minutes. At 33 hours, 21 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/12/68, GET: 340300 140/1

PAO This is Apollo Control 34 hours 3 minutes and Apollo 7 coming up on Tananarive station. Capcom Ron Evans plans to just put in a call and telling them we will standby through the pass. We don't intend to initiate any communication here, but we will stand by to monitor anything the flightcrew might care to communicate to us.

CAPCOM Apollo 7, Houston. Tananarive standing by.

PAO We are getting so much crosstalk and noise here that will punch off and come back up if there is any communication on this pass.

END OF TAPE

CAP COM Go.  
SC Roger. We have the (garble) meter readouts  
for you if you've got time to take them.  
CAP COM Roger, we have one minute to LOS.  
SC Forget it.  
CAP COM Roger. We'll check you on Mercury at

34 + 25.

PAO This is Apollo Control, 34 hours 8 minutes. There will be no more communication at Tananarive. We'll pick up the Mercury at 34 hours 25 minutes. At this time we are planning a change of shifts in the Control Center between 23:00 and 23:30 p.m. Central Daylight Time which would place the News Conference with Flight Director Gene Kranz between 23:00 and 24:00 Central Daylight Time. Apollo Control.

END OF TAPE

PAO This is Apollo Control 34 hours 25 minutes into the flight. Apollo 7 has just been acquired at the Mercury tracking ship. There is a call now.

CAPCOM Apollo 7, Houston. Opposite omni.

SC Roger. Hey, Ron, would you identify (garble) for us please. (garble) serial number 102 is the number on the other side. Sugar Easy Baker three three's one zero zero zero five zero dash two oh six. Over.

CAPCOM Roger. What was your request on this?

SC Want you to verify if that is the 2A filter. The filter that is called out as 2A in our documentation. That is the only labeling on this filter.

CAPCOM Roger. A filter you say?

SC A filter for the 70mm Hasselblad. Over.

CAPCOM Roger, copy now. Walt, we would like some onboard readings. Your battery charger current. And the service module RCS propellant quantities.

SC Battery current is still reading point five amp and I would like to know what you have on it and I will read you the onboard quantities in the service module RCS propellant. Quad A is showing 58 percent. Quad B is still at 93 percent where we launched at. Quad C is 65 percent. Quad D is showing about 68 percent. Over.

CAPCOM Roger, we copy and we are reading point four three on the battery charger current.

SC Roger, I will continue charging and I am still reading point five down the line and you can give me a call when they cease charging.

CAPCOM Roger, will do. (Pause) Apollo 7, Houston. Do you want your temperature corrected onboard readout? For the RCS?

SC (garble)

CAPCOM Roger. Alpha five six disregard Bravo Charlie six one and Delta is six four.

SC Five six six one six four. I have all the service test meter readouts. Are you interested in any of them in particular. I have them logged in the flight plan. I will give you the RCS anyway. That is five C and D and six A B C and D all five modes except 60 C and 64.6.

CAPCOM Roger, we copy and we like the battery pressure if you have it available. And while S-band volume up at three four plus four four.

SC Point four volts and it seems to be in a standard position. We checked it before we made that urine dump and goes right down to point 6 volts and (garble) right back up to one point four.

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CAPCOM Roger.  
PAO This is Apollo Control. We have LOS  
at the Mercury now. Hawaii will acquire at 34 hours 43 min-  
utes. At 34 hours 33 minutes this is Mission Control  
Houston.

END OF TAPE

PAO This is Apollo Control at 34 hours 43 minutes. Apollo 7 coming up on Hawaii now on it's 22nd revolution. The Hawaii station has just acquired. We'll stand by and wait for a call.

CAP COM Apollo 7, Houston. Apollo 7, Houston.

SC Apollo 7, loud and clear.

CAP COM Roger. Loud and clear you're coming down down voice backup now.

SC Roger.

CAP COM Ah, Wally, we'd like to select (garble) at your convenience just to update the ...

SC (garbled)

CAP COM Apollo 7, affirmative.

SC Roger. (garbled)

CAP COM Say again. A little garbled that time.

SC We'd like to give you an update. We'd like to put the sextant calibration test when we call for 36 hours and 30 minutes into Donn Eisele's wake period.

CAP COM Roger, sextant calibration test. We'll see if we can't move that into Donn's wake period.

SC Thank you.

CAP COM Apollo 7, Houston. We're still looking on that Dash 206 to determine which one it is.

SC Roger. Its showing RED, it's not GREEN. We're hoping it's 2A.

CAP COM Roger.

SC Clear foil filter. (garbled) showed on us before we launched.

PAO This is Apollo Control. We've got about a minute to LOS. It seems doubtful we'll have anymore transmissions on this pass. We'll come back up if we do.

CAP COM One minute to LOS. We're getting a lot of static on the ground down here. I was just wondering if you're getting it.

SC Say again.

CAP COM Ah, you're --

SC Go ahead. Roger, would you say again?

CAP COM Roger. We're receiving a lot of static on the ground. Are you receiving any at all?

SC Negative.

CAP COM Roger.

PAO LOS at Hawaii now. The tracking ship Redstone in the South Pacific will pick up the spacecraft at 34 hours 59 minutes. This is Mission Control Houston at 34 hours 51 minutes.

END OF TAPE

APOLLO 7 MISSION COMMENTARY 10/12/68 GET: 345920 MC144/1

PAO This is Apollo Control, 34 hours, 59 minutes, Apollo 7 coming within range of Redstone now.  
CAPCOM Apollo 7 Houston - Apollo - Apollo 7 Houston

SC This is Apollo 7, are you ready?  
CAPCOM Roger, the dash 206 filter is the two Alpha filter, and it should be clear, hopefully.

SC Houston, say it again  
CAPCOM Roger, the dash 206 filter is the two Alpha 2A filter.

SC Roger, thank you. I have a question on a pool of water, we are scheduled to coordinate at this time and we have a completely full tank. This tank has been full for some time, Ron, and it came up several months back, there is a question as to how much ullage volume you have to have atop that tank before chlorinate. I'm kind of unclear about the fact that the chlorination that we put in yesterday is probably still in that tank.

CAPCOM Roger, we'll attack the problem and get the word to you shortly here.

SC Okay, CAPCOM will you tell them that we will wait till you get an answer.

CAPCOM (garble) I understand I told you to answer.  
CAPCOM CAPCOM to Flight - Apollo 7 Houston, we are reading .41 on the battery charger and you can terminate charging that battery.

SC Understand, stop charging .41 AMP.

CAPCOM Affirmative

SC I am still reading .5 on board

SC Houston, Apollo 7, over

CAPCOM Houston, over - go ahead Walt.

SC Roger, I show that we've probably been charging battery A now for about 7 hours, is that consistent with putting all the energy back that we took out to reboot and both the burns, over.

CAPCOM Walt, we've took out 9.3 and looks like we put in about 4.5 hours.

PAO This is Apollo Control, Redstone has loss of signal now. Water chlorination is the only task spelled out in the flight plan for the next hour; since we didn't get an answer back up to them, I suspect that they wont do anything about it till we get to Ascension. We estimate acquisition at Ascension at 35 hours, 26 minutes, at 35 hours, 6 minutes. This is Mission Control Houston

END OF TAPE

PAO This is Apollo Control 35 hours 26 minutes into the mission. Apollo 7 coming up Ascension now in a low elevation pass but we may be able to get two to three minutes of acquisition here we'll stand by.

PAO This is Apollo Control at 35 hours 29 minutes. We went by Ascension without attempting to communicate with the spacecraft on this low elevation pass. Next station to acquire will be the tracking ship Mercury. Acquisition there at 36 hours.

END OF TAPE

PAO This is Apollo Control at 36 hours into the mission. Apollo 7 coming up on the tracking ship Mercury now. The station at Guam has overlapping coverage so we'll have a fairly long pass here. We have acquisition at the Mercury and we'll stand by for some communication.

CAP COM Apollo 7, Houston.

SC Roger Houston.

CAP COM Roger, we'd like to send a P-27 update request accept and I have a nav check to give you.

SC check.

CAP COM Nav check 036 15 4 balls + 1875 + 16885

1271. Read back.

SC Roger understand 615 4 balls + 1875

16885 1271 over.

CAP COM Roger. I didn't get your readback on the hours. 036 hours 15 minutes.

SC Roger

CAP COM Apollo 7, Houston. I've got some update for you on the RCF calculated quantities and your profile from battery status if you want to copy.

SC Did you read our readback on the nav check okay? (garble) for your info on the RCS quantity and what update.

CAP COM Roger. This will be an update on figure 3-1 on your RCS profile at 36 hours you have 820 pounds.

SC Roger. 36 hours 820 pounds.

CAP COM And your RCS ground calculated quantities are in order 56 percent 63 percent 47 percent 63 percent.

SC Roger. I read 56, 63, 47, 63 and the total quantity again 83.

CAP COM Roger, your total quantity is 820 pounds.

Apollo 7, Houston. Apollo 7, Houston. Apollo 7, Houston.

Apollo 7, Houston. Apollo 7, Houston. Apollo 7, Houston.

Guam M&O, Houston Cap Com, are we getting out to you?

COMM You read. Hey, Guam, you read?

GWM Roger, understand (too faint)

CAP COM Apollo 7, Houston.

SC Apollo 7 go ahead.

CAP COM Roger, reading you weak. The computer is yours.

SC (too faint)

CAP COM Say again, Walt.

SC Roger, at 36 hours into the flight what number do I go on my chart?

CAP COM Roger, you go in 820 pounds, 820 pounds.

SC (cut out)

END OF TAPE

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CAPCOM Roger. You are going in 820 pounds,  
820 pounds.  
SC Eight hundred and twenty pounds and I  
copied 561607 and 56634763.  
CAPCOM All right, Roger. How's that again?  
56634763.  
SC Right, thank you.  
CAPCOM And your battery status?  
SC Say again.  
CAPCOM Your battery status, ampere hours.  
SP Roger.  
CAPCOM About A35.2, B30.4, C39.5.  
PAO This is Apollo Control. Guam has LOS  
now. Very - bad communication through those passes. Red-  
stone will acquire at 36 hours, 32 minutes. We will not  
pick up the HAW station on this pass. We are still estimat-  
ing a ship change here in the control center at - approxi-  
mately 11 to 11:30 central daylight time which would put  
the news conference from starting between 11:30 and midnight.  
At 36 hours, 12 minutes, this is Mission Control, Houston.

END OF TAPE

PAO This is Apollo Control 36 hours 32 minutes into the mission. We are about to acquire at the Redstone. The sextant calibration test that was scheduled for this time and that Wally Schirra asked to be postponed until the command module pilot, Donn Eisele is awake, will be postponed looking now at about 42 hours and a half into the mission. Estimated time when the sextant calibration test will probably be performed. Redstone has acquired. There hasn't been a call up to the spacecraft yet, but we will stand by for that.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Roger. Did you copy battery status last pass?

SC Stand by. Roger I had 35 point six 30 point four I think it was and 39 something Ron. It looks to me like we didn't fill up battery A again and is anybody getting consideration to do a second recharge on that battery some other time of the flight?

CAPCOM Well, that is a possibility. We wanted to cut it off at the point four limit though to - so we wouldn't get into overcharge type of problem we were talking about before launch. And we are working on it now and we can't really come up with an answer at the present time. We are working on it and will let you know. And Wall, I have a Lima Sierra update for you.

CAPCOM (Pause) Apollo 7, Houston.

SC Go ahead, Houston.

CAPCOM Roger. I have a Lima Sierra update.

SC Still very weak.

CAPCOM Roger, Lima Sierra update.

SC Go ahead.

CAPCOM Roger, Lima Sierra zero seven four flash zero five one.

SC Roger, zero seven four flash zero five one.

CAPCOM Seven, Houston, 1 minute until LOS. Be advised Air Force 26, Navy 20.

SC Roger.

CAPCOM Sorry about that.

SC Welcome to the club.

PAO This is Apollo Control 36 hours 41 minutes. Redstone has LOS now. As you heard, they passed up the bad news on the football game to Naval academy graduates, Wally Schirra and Donn Eisele. Air Force 26, Navy 20. This is Mission Control 36 hours 41 minutes.

END OF TAPE

PAO This is Apollo Control, 36 hours 59 minutes into the mission. Ascension has just acquired Apollo 7.  
 CAP COM 7, Houston. Apollo 7, Houston. Apollo 7 Houston.

SC Go ahead.  
 CAP COM Roger, on the water correlation, withdraw about 8 ounces of water then correlate.

SC (garbled)  
 CAP COM Roger. I have a flight plan update.  
 Ready to copy?

SC (garbled)  
 CAP COM Roger, flight plan update 38 + 40 delete NCC update. 39 + 40 do option 3 vice option 2 40 + 10. Cancel rendezvous nav at 8 -- 80 nautical miles 41 + 00 waste water dump 42 + 35 sextant calibration previously scheduled at 36 + 35. Over.

SC Roger. Over.  
 PAO This is Apollo Control, 37 hours 3 minutes. This water correlation was accomplished by injecting an ampule of chlorine into the water tank with a syringe-like device. It's about an ounce of chlorine. We're in a process of changing over the shift now and the shift headed by Jerry Griffin will be up very shortly.

END OF TAPE

PAO This is Apollo Control 37 hours 33 minutes into the mission. We are coming up now with a pass in the Mercury tracking ship. We did have some further communication after the change of shift here on the Ascension pass between MCC and Apollo 7. We will play and then go live into the possible communications between Mercury tracking ship and the spacecraft.

CAPCOM Apollo 7, Houston. S-band volume up at three seven plus three six.

SC

...

CAPCOM Apollo 7, Capcom.

SC

Go ahead.

CAPCOM We wanted to know how you felt about shuffling this sleep cycle around a little bit. Kind of looks to me at least and speak up if you don't like the sound of it, but we have got a hell of lot lost motion here when you might better be getting a little rest.

SC

We are getting kind of pooped and I think that is why we started off the way we did today. ...

CAPCOM You are very garbled. Not able to read you.

SC Roger. Donn is sleeping now and he needed the sleep more than we did.

CAPCOM Roger, understand that. I guess the question I am asking is whether you have got any allergy at all that all three of you knocking it off for a while.

SC

Let's go another day with it and ...

CAPCOM Okay, we only have about 30 seconds left in this pass. Why don't you think about it and Tom or Ron will talk to you about over Guaymas.

SC

Roger.

MER

This is Mercury.

CAPCOM

Apollo 7, Houston.

SC

What do you say here, Tom?

CAPCOM Roger, Wally. Real good rendezvous you pulled off today.

SC

...Yeah, that's a little more dramatic than the other bird we use to fly.

CAPCOM

Understand. ....discuss free flight.. period of time about looking ahead in the flight plan. About the possibility of you all going all three crewmen on the sleep cycle. I just want to discuss it for down the line - What Deke was trying to say - what do you think about it?

SC

I don't think I would be afraid to do it on another flight maneuver, kind of reluctant right now.

CAPCOM

Okay.

SC The machine is working real well, Tom.  
CAPCOM (Garbled)..block down about 40 hours  
and also waste water dump at 41 and kind of quiet time after  
that for another 4 our 5 hours.  
SC Very good. ...is no problem at all. In  
fact, it is an asset.  
CAPCOM Okay.  
SC For all of those worried about the space-  
craft picking up motions from the crew, no such thing. We  
can knock around the cabin like mad. You get to be quite a  
gymnast.  
CAPCOM I want to ask you a question. How are  
the sleep bags working out?  
SC Not so hot.  
CAPCOM Okay.  
SC You miss the one g lying down. With the  
seat belts resisting you are held down and you feel better  
controlled and better contained, I guess. Sleeping bag, you  
try to find a place to stick your head or your arm to hold  
on.  
CAPCOM Our analysis is the couch is probably  
a little better than the sleep bag.  
SC That is correct.  
CAPCOM Okay.  
SC We find the lightweight headsets are  
preferrable to comm carriers too.  
CAPCOM Right, reviewed the flight plan here  
understand when you went to the lightweight headsets.  
SC Yeah, the cables for the comm carrier  
is very objectionable and jams you in the neck and the  
shoulder and keeps pulling your hair out.  
CAPCOM All right.  
SC We are not at all hungry by the way. We  
are trying to get some exercise to keep ourselves going. That  
exergenyies are a heck of a good deal.  
CAPCOM Works out real good in zero g.  
SC Hate to admit that, but it is probably  
one of the best spacies things we have had in years.  
CAPCOM Okay. Okay, on the sleep thing, Wally,  
it is strictly your option, obviously. We just got to  
thinking maybe it will work out better, give you a little  
more, longer sessions of it.  
SC Houston Capcom.  
CAPCOM Go ahead.  
SC We don't think we ought to sink Hasselblad  
here, we may be able to take one a little later.

CAPCOM Roger, understand about the camera.  
SC Hey, Tom, I would like to log some  
photographs here on magazine PU, starting the same...  
started shooting about over the Red Sea and we are continuing  
the same 12 right now.

CAPCOM Okay, we will record in and we have it  
Walt, thank you.

SC When are we going to get our tape  
recorders back. I see it is in motion now. Will we ever  
finish dumping all the tapes on the rendezvous run.

CAPCOM Not yet Walt, we are still dumping.

SC Okay, we would like to get a go as soon  
as we get that through.

CAPCOM Roger. We will let you know as soon as  
it is finished.

END OF TAPE

SC Houston, Apollo 7, over.  
CAP COM Go ahead 7, Houston. Houston, Apollo 7  
Apollo 7, Houston, we go.  
SC Houston, Apollo 7, over.  
CAP COM Roger. Apollo 7, this is Houston. Go  
ahead.  
SC Roger, Tom. Do you know if they ever  
got the voice dump right after ah, the east end we put our  
com in for on about the tape and I'm not sure if they  
dumped (garbled).  
CAP COM Apollo 7. We'll check on it.  
SC Thanks Tom.  
CAP COM Apollo 7, Houston. Will you give us  
opposite omni? Apollo 7, Houston will you give us opposite  
omni? (from background someone said - we got him)  
SC I heard the boys in the backroom, you  
got it now.  
CAP COM Roger. Apollo 7, Houston it's taking  
quite a while to get all the de-voiced data played back  
Walt and we won't really know for quite a while. Is there  
any particular GET on the voice you want us to check.  
SC Roger. I know we rewound the tape at  
the Canaries, I think it was. I'm hoping we (garble)  
sometime there about 20 minutes I think we put our descrip-  
tion of (garble) by the tape and someplace the first hour (garble)  
CAP COM Apollo 7, Houston.  
SC Go ahead.  
CAP COM Roger, (garble) first made ... from liftoff  
until Canaries and because of rewind and everything we do  
not have that on voice.  
SC Okay, when we get the tape back, we'll  
probably try to put some on it.  
CAP COM Okay. Apollo 7, Houston. We are about,  
ah, we're close to LOS and you gonna have the tape back,  
we're just about finished all the rendezvous dump.  
SC Roger. Thank you. We've just finished  
chlorinating the water ...  
CAP COM Roger.  
PAO This is Apollo Control 37 hours 49 min-  
utes into the mission of Apollo 7. During this last pass  
which was rather a long pass including the Mercury tracking  
ship and Guam. We heard the crew complimented for a good  
rendezvous today. Spacecraft Commander Shirra is reluctant  
to change the sleep cycle, that is for all three to sleep  
at the same time. They indicated that the sleeping bags  
were not working out too well and that the seat belt in the  
seat works better than the sleeping mode or rather in the  
couches than the sleeping bags. The lightweight head sets

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PAO are better than the com carrier because the cable jerks their heads around. They indicated a possible problem with the Hasselblad camera and just indicated before LOS that they have finished chlorinating the water onboard. The next contact will be with Redstone tracking ship. That will come at about 38 hours 47 minutes into the mission. At 37:51, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control 38 hours 7 minutes into the mission. The spacecraft commander and the LM pilot are now in an eating period. The command module pilot is in a sleep period. We should have contact with the Redstone tracking ship very shortly now - in 1 or 2 seconds. There's nothing scheduled in the flight plan for contact but let's stand by.

CAPCOM Apollo 7, this is Houston. We have acquisition on Redstone.

CAPCOM Apollo 7, Houston. Opposite omni please.

CAPCOM Apollo 7, Houston. Would you give us the opposite omni now?

SC Roger. That's back where we started. Is that where you want?

CAPCOM Yeah, you switched about the same time we said to switch so -

SC (Level too weak to read)

CAPCOM Apollo 7, Houston. Have 1 minute to LOS at Redstone.

SC Roger.

PAO This is Apollo Control, 38 hours 16 minutes into the mission of Apollo 7. We have loss of signal at Redstone tracking ship. The next contact will be at Ascension Island 38 hours 33 minutes into the mission. This is Apollo Control.

END OF TAPE

PAO This is Apollo Control 39 hours 7 minutes into the mission of Apollo 7. We are in the 25th revolution coming up on acquisition with Mercury tracking ship. 39 hours 10 minutes. We have a tape of the last pass over Ascension which we will play first and then we will go right into the live standby on the Mercury tracking ship. So we will now play the tape of the Ascension pass.

CAPCOM Apollo 7, Houston through Ascension.

SC ....

CAPCOM Roger, read you about four by Wally.

SC ...

CAPCOM Apollo 7, Houston, you are coming garbled.

Say again.

CAPCOM Apollo 7, Houston. Say again, please.

Roger out. Apollo 7, Houston.

SC Go ahead.

CAPCOM Roger, now reading you loud and clear, Wally. You happen to be in an attitude and you have the camera available, here is a good area that we haven't had many pictures in. It is 38 56 30. The upper end of the Persian Gulf down and to the right. Do you have some time and camera, is fine, if not no problem.

SC Roger, say again the target.

CAPCOM Roger. The upper end of the Persian Gulf. It will occur in 38 56 30.

SC ...

CAPCOM Okay.

SC Houston...

CAPCOM Go ahead.

SC ...night air glow 240 degrees ...all almost all over the horizon as we sweep low. ..

CAPCOM Okay, you say all around the horizon?

Wally.

SC ...sky.

CAPCOM Roger.

SC ...Sirius came up ..

CAPCOM Okay.

CAPCOM Hello Apollo 7, Houston. Just looking at the DSKY, are you pitched down from about 90 degrees?

SC That is affirm. Camera all ready.

CAPCOM Well, we have about 1 minute until LOS with Ascension, Wally and we will catch you next time over the Pacific.

CAPCOM Apollo 7, Houston.

SC This is Apollo 7. How do you read?

CAPCOM Apollo 7, Houston.  
SC ...  
CAPCOM I am reading you about three by three.  
I had a block update but I will give it to you over Guam in a  
few minutes. About 5 minutes.  
SC That is a block update over Guam.  
CAPCOM Apollo 7, Houston.

END OF TAPE

CAPCOM Apollo 7, Houston. (Pause) Apollo 7,  
Houston. (Pause) Apollo 7, Houston. (Pause) Apollo 7,  
Houston. (Pause) Apollo 7, Houston.  
SC Roger, Houston. Apollo 7. Go.  
CAPCOM Roger, I have block data. Are you ready  
to copy?  
SC Stand by one. ... stand by.  
CAPCOM Are you ready?  
SC Okay, go ahead. I got it now.  
CAPCOM Roger. Zero two seven dash two Bravo  
Plus two zero six minus zero two five four zero four one two  
six one three four one zero four zero two eight dash two  
Bravo plus two seven seven minus zero two eight eight zero  
four three zero two zero five four one nine three zero two  
nine dash one Bravo plus two four zero minus zero six three  
three zero four four two seven five two four one two eight  
zero three zero dash one Alpha plus two nine seven minus zero  
six six two zero four six zero three three four four two four  
six zero three one dash one Bravo plus three one seven minus  
zero six six two zero four seven three nine two nine four  
four three zero zero three two dash one Alpha plus two nine  
one minus zero six six two zero four nine one five zero nine  
four six five zero coming up on LOS.  
SC Roger, understand. I read back later then.  
CAPCOM Roger, thank you.  
PAO This is Apollo Control 39 hours 23 min-  
utes into the mission of the Apollo 7. We have just had quite  
a long pass through the Mercury tracking ship and Guam. The  
next contact with the Redstone tracking ship at 39 hours  
42 minutes 34 seconds. At 39 23 this is Apollo Control.

END OF TAPE

PAO This is Apollo Control 39 hours 42 minutes into the mission of Apollo 7. We are coming up on the Redstone tracking ship and a very few seconds we will stand by for whatever may transpire there.

CAPCOM Apollo 7, Houston.

SC Roger, Houston.

CAPCOM Roger, Apollo 7, Houston ready for your read back on block data when you are ready.

SC Roger, stand by. I am right in the middle of a P52. Will be with you in a second.

CAPCOM Right.

SC Houston, I am ready with the feedback.

CAPCOM Roger, go.

SC Roger, area zero two seven two Bravo plus zero six minus zero two five four zero one two six one three four one four three dash two Bravo plus two seven seven minus zero two eight eight zero four three zero two zero four five four one nine three zero two nine one Bravo plus two four zero minus zero six three three zero four four two seven five two four one two eight three zero dash one Alpha plus two nine seven minus zero six six two zero four six zero three three four four two four six zero three one dash one Bravo plus three one seven minus zero six six two zero four seven three nine two nine four four three four two two dash one Alpha plus two nine one minus zero six six two zero four nine one five four nine four six five zero.

CAPCOM Roger. Copy reads back. That check one item on the third block zero two nine dash one Bravo second entry plus two four zero.

SC Roger, plus two four zero.

CAPCOM Roger, reads back correct. And also advisory, we had good voice quality on the Redstone dump that we got on the last pass.

SC All very good. I got a couple of small items for you. Wally took a couple of aspirin and an actifed and he only took one actifed. He feels fine. He has just got a little stuffy symptom and I put some nose grease on my nose because my nostrils are a little dry and besides it smells good.

CAPCOM Roger, understand Wally took two aspirins and one Actifed and only took one Actifed and you took some nose drops was it or cream?

SC Nose cream. It is a fluid they gave me with my pills. Walt is the one that took the Actifed not Donn.

CAPCOM Oh, okay, Donn. I am sorry.

SC Yeah. ... about 16 drinks of water here  
in the last 45 minutes or so.  
CAPCOM That is Donn.  
SC Right. Check.  
CAPCOM Check.  
SC I just want to add ... coming out of a  
very good sleep and feeling great.  
CAPCOM Roger. Thank you. Apollo 7, Houston.  
We would like the biomed to number one.  
SC Understand and I will do that after I  
after I do this alignment. Does that mean you want to...  
CAPCOM Roger. We lost the down link on the  
biomed and this is just to see exactly the circuit or in the  
biomed powerdown.  
SC Roger. I will do that in a couple of  
minutes.  
CAPCOM Okay, fine. We have about one and a  
half minutes until LOS.  
SC You mean I get until next pass to ..  
this alignment.  
CAPCOM Okay.  
PAO This is Apollo Control 39 hours 51 minutes  
into the mission of Apollo 7. We have just completed our pass  
with the Redstone tracking ship. Next contact will be  
Canary Islands, which should come about 40 hours 14 minutes  
17 seconds. During this last pass, we went through an inertial  
measuring unit realignment. The inertial measuring unit of  
course provides basic reference against which you can measure  
spacecraft movement and it has to be realigned periodically.  
We were informed that Astronaut Schirra took one Actifed and  
two aspirins and Astronaut Cunningham one Actifed and Astro-  
naut Eisele some nose cream was applied to his nose. We have  
had no biomedical readouts during this last pass and the  
medical people and the Flight Director now conferring in  
tracking down the situation to see if we can tune that up and  
get some biomed readouts in the next passes. At 39 hours  
52 minutes, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 40 hours, 14 minutes into the flight of Apollo 7. We are in the twenty sixth revolution coming upon Canary Islands in a few seconds. We will join such conversation as we have at the Canary point now.

CAPCOM Apollo 7, Houston acquisition, Canary.

SC I hear you Houston.

CAPCOM Okay. Apollo 7, Houston, about two bags LOS, Canary. Next acquisition will be Redstone at 41 + 17. That will be about 1 hour. Apollo 7, this is Houston.

SC Go ahead, Don.

CAPCOM Roger, Don, did you get P-52 finished?

SC Yeau, I did it two or three times.

CAPCOM Roger.

SC I was flying.

CAPCOM Good show. Apollo 7, Houston, interrupt 30 seconds to LOS.

SC This is LOS. It took about half an hour.

CAPCOM Okay.

PAO This is Apollo Control. We have had lost of signal, Canary Islands. Apollo 7 will now go for about an hour before we have contact at the Redstone - Redstone tracking ship. That will be - 41 hours, 17 minutes, 24 seconds into the mission. The program 52, inertial measurement, measuring unit realinement was confirmed to have been completed. The only thing that should take place between now and the next station contact will be the water waste tank dump and the environmental control system which will take place at 41 hours into the mission. At that point also, the spacecraft commander and the lunar module pilot will enter their sleep period. And Don Eisele, the command module pilot will be awake and on duty. So we have a long dry spell for 1 hour before the next station contact. At 40 hours, 20 minutes into the mission, this is Apollo Control.

END OF TAPE

PAO This Apollo Control 41 hours 17 minutes into the mission of Apollo 7. We're approaching the Red Stone tracking ship and astronaut Stafford is endeavoring to make contact with the spacecraft. Let's join them now.

CAPCOM ... Have you preformed the waste water dump that was sceduled for around 41 hours?

SC ... we're going to wait until it gets to about 90 percent, that way we won't have to do it so often.

CAPCOM Okay. SP-1 we're going to give you the MC - we're going to send you an MCC update previously scheduled for for 4440 at 44 hours.

SC Roger. Understand.

CAPCOM And we're planning the S-IVB tracking previously scheduled at 4610 . It will now be at four four plus three six. Are you sure that was good update vectored on that and the S-IVB will be at about 170 nautical miles.

SC Hey Tom, how (garble) as soon as I get them I'm going to write them down and then you can give it to me a little later.

CAPCOM Roger.

SC Paul, are you still there.

SC Houston, Apollo 7.

CAPCOM Go, Apollo 7, Houston.

SC Roger. We've just completed the 23 sextant calibrations. I think the your data is down range.

CAPCOM Apollo 7, Houston. We're about one minute to LOS and your starting to fade out. I understand you've completed the sextant calibration.

SC Roger.

CAPCOM Apollo 7, Houston. Did you experience a restart a couple of minutes ago.

SC I experienced a restart during part of program 52 that I was using to find some stars I needed. and I think it happened - about one before the other day. When you go from zero optics to CMC and also hit the feed and you haven't waited 15 seconds. Its a procedural error and its just a momentary restart, almost program alarm.

CAPCOM Okay.

SC Incidentally I have a 02 flow high light I expect its the same problem we had earlier ... we haven't found the trouble shooter for sure yet, though.

CAPCOM Okay. We'll pick you up - its about 15 seconds to LOS and we'll pick you up over Canary's.

PAO This is Apollo Control 41 hours 26 minutes into the mission. We've finished our Redstone tracking ship pass. The next point will be Antigua at 41 38. They spoke about when to dump waste water. The crew desires to dump it

PAO when 90 percent quantity is reached, however they're talking about it now. It's possible that that would be reached right in the middle of the spacecraft commander and LM pilot sleep period; in which case astronaut Schirra would have to be disturbed so they could get the equipment out to dump the excess water. That will probably be resolved by the time we have contact at Antigua. We're still getting no bio-medical data readouts and they can only assume that there's some mechanical difficulty with some of the equipment. At 41 hours, 27 minutes into the mission into the mission this is Apollo Control.

END OF TAPE

PAO This is Apollo Control 41 hours 38 minutes into the mission of Apollo 7. We're coming up and should have access with Antigua just about now. Let's join the conversation and see what goes on.

CAP COM Apollo 7, Houston. Apollo 7, Houston.

SC Houston, Apollo 7, Go.

CAP COM Roger. In reference to the water dump. We're reading 70 percent now, predicting a 90 percent level at approximately 45 hours but no later than 46 hours. We'll have to dump at that time. It's right in the middle of a sleep period, ah, to get dumping as soon as you can in order to prevent interrupting in the middle of sleep cycle.

SC Roger, I got you Bill. They're already asleep and the way we've got it arranged it won't disturb either one of them. Just as soon leave at 45 hours.

CAP COM Okay.

SC Good thinking. Ah, Bill, could you give me those flight plan updates that Tom called awhile ago. I was right in the middle of a G&N exercise and didn't get to write it down.

CAP COM Okay, I'll start talking I have about a minute and 15 seconds. Okay, at 44 hours we will give you the NCC update previously scheduled for 44 + 40.

SC Roger.

CAP COM Okay. At 44 + 36 perform S-IVB tracking. That was previously scheduled at 46 + 10. At that time, this new time, the S-IVB will be at 169 nautical miles. The last item at 45 + 30 delete 252 IMU realign.

PAO This is Apollo Control. Our next contact will be Canary Islands at 41 hours 47 minutes, about 5 minutes from this time. The most significant thing in the last two contacts, of course, has been in the flight plan we have changed the S-IVB tracking time from 46 hours and 15 minutes into the mission back to 44 hours and 36 minutes into the mission. The reason being that the S-IVB will be at 169 nautical miles from the spacecraft at 44 36 where if they waited another revolution, it would be farther away from the spacecraft. They desire to track it at roughly that 170 nautical mile distance. We'll come up again when we have contact with the Canary Islands in some four minutes or so from now. At 41 hours 43 minutes, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control 41 hours 47 minutes into the mission of Apollo 7. We're coming up in a few seconds with acquisition with the Canary Islands tracking station. We'll join them now.

SC Houston, go ahead.

CAP COM Roger. How far did you copy on the flight plan update?

SC ... I think I got it all Bill. I've got the S-IVB tracking at 44 36 instead of 46 hours and delete the 252 realignment at 45 30.

CAP COM Roger. That completes the flight plan update. I have a couple of items. We're still monitoring an O2 flow high check waste dump closed. Second item, we'd like biomed CMP. Okay, we're monitoring it now. Forget the biomed, it's okay.

SC Getting anything? Over.

CAP COM Yes, we are.

SC Okay. Bill, only getting half it, ... can't pick up, I'll try again later to get it to plug in.

CAP COM Okay.

SC I did have the waste dump OPEN now, I don't think that ought to ... so high.

CAP COM Roger. Understand it was Open.

SC Roger. ... a little while there it was ... department however I ... that ... so high and I just turned the ... OFF.

CAP COM Roger.

SC ... I suspect it's still a ... problem.

CAP COM Okay. We're watching it. We have about six more minutes here.

SC (garbled) I'd appreciate it.

CAP COM Roger. We'll keep you informed.

Apollo 7, Houston, we have about two minutes LOS Canaries. Your O2 minifold is dropping off. It's dropped from .96 to .74 in the last few minutes. O2 flow.

SC Okay. O2 flow.

CAP COM Right.

SC ... doing the same thing. My onboard procedure leads me to believe it's still a failing sensor. Do you confirm that? A, Bill, what do you have down there for A2 tank pressure, mine is reading low, about 840.

CAP COM Okay, stand by.

SC Ah, correction, number two is reading low. Number one is about 860.

CAP COM Coming up on LOS you have 876 and 853 in one and two, 846 in the third tank.

SC Okay, is that alright with everybody down there?

CAP COM I think so, stand by.  
SC (garbled)  
CAP COM No, that's good.  
SC ... everybody concerned.  
CAP COM We'll need the S-band volume up for  
Honeysuckle pass at 42 + 32.  
SC Roger, I'll ...  
CAP COM Thank you.  
PAO This is Apollo Control, 41 hours 57 minutes into the mission. We are out of range now with Canary Islands. At 42 hours 32 minutes, they will be in range of Honeysuckle in Australia. They have checked the O2 flow high rate as the readout was before, the check waste vents were closed and when that happened, the O2 rate came down from 94 and it came down to 70.7 ah .94 to .72 pounds per hour which is quite acceptable So, with everything looking good at 41 hours 58 minutes into the mission, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 42 hours 32 minutes into the mission. We are coming up on our pass over Honeysuckle Creek. We're halfway through Australia now and we should have contact with the spacecraft in a very few seconds. We'll stand by for such contact.

CAP COM Apollo 7, Houston. Apollo 7, Houston.  
Apollo 7, Houston. Apollo 7, Houston. Apollo 7, Houston.  
Apollo 7, Houston. Apollo 7, Houston. Apollo 7, Houston.  
Apollo 7, Houston. Apollo 7, Houston. Apollo 7, Houston.

PAO This is Apollo Control 42 hours 39 minutes into Apollo 7. We had no response from the spacecraft during this pass at Honeysuckle Creek in Australia. We should have some contact at the Redstone tracking ship which will have acquisition at 42 hours 52 minutes into the mission. At 42 39, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control 42 hours 52 minutes into the mission. We are coming up on the Redstone tracking ship acquisition period now. Let's listen in.

CAP COM Roger. Reference the O2 flow high. Analysis here indicates your O2 low high indication onboard was valid at the time you had 5.0 cabin pressure when the waste vent was open. Upon closing, the pressure gradually increased to 5.1. Apollo 7, Houston. Do you still have an O2 flow high?

SC Negative. Down to normal now.

CAP COM Okay. One other item. The waste water dump recommend dumping 85 percent instead of 90 percent. They're not sure it's safe to wait til 90 percent due to possibility of overboard drain freeze. Apollo 7, Houston. Is the commander's and the LMP's cobra cable unconnected? Verify it is not connected.

SC Roger. They're not connected up here. They're off of it.

CAP COM Thank you very much. Also I have a -- disregard.

SC Say again.

CAP COM Ah, disregard.

SC Hey, Bill, would you log me 12 clicks when the waters gone?

CAP COM Roger, 12 clicks when the waters gone. Apollo 7, Houston. One minute LOS Redstone, Antigua at 43 + 10.

SC Roger. 43 + 10. You got the night shift, eh?

CAP COM Apollo 7, Houston. Coming up on LOS I will have a flight plan update. There are a couple of items at Antigua.

PAO This is Apollo Control 43 hours 1 minute into the mission. We will have the next station contact at Antigua, 43 hours 10 minutes, 9 minutes 8 minutes from now. At 43 02, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control 43 hours, 10 minutes into the mission of Apollo 7. We're now coming into Antigua. We should have contact any second with Antigua. Let's join the conversation.

CAPCOM Apollo 7, Houston.

SC Apollo 7, go ahead.

CAPCOM Roger. I have a couple of things for flight plan update.

SC Okay, go ahead.

CAPCOM Roger. Fuel cell O2 purge at 45 + 30.

That's over Carnarvon.

SC ... O2 purge at 45 + 30.

CAPCOM Roger. And due to the matter of information have you checked any of the D&N control modes?

SC Roger. We've used - we maneuvered manually about 5 degrees per second and our dead band we've done auto maneuvers, auto trip maneuvers, and same dead bands and I also used the minimum impulse controller in the LEB.

CAPCOM Roger. 5 degrees per second, minimum dead band, auto trim, minimum dead band, and a minimum impulse controller in the LEB.

SC Roger.

CAPCOM Thank you.

SC Houston, Apollo 7.

CAPCOM Apollo 7, Houston, go. Apollo 7, Houston go.

SC ... Apollo 7.

CAPCOM Roger Apollo 7, Houston.

SC We're getting a high pitched interference noise coming over VHF. Have you got any idea what it is? Are you picking it up down there?

CAPCOM High pitched interference on VHF, a negative. Stand by.

CAPCOM Donn this is about the same place last night where you picked up the music.

SC There's music on there too.

CAPCOM Apollo 7, Houston. The net is looking at it.

END OF TAPE

PAO                    This is Apollo Control 43 hours 19 minutes into the mission of Apollo 7. We'll have acquisition by Canary Islands at 43:21:59, that's only two or three minutes from now. We heard from Mr. Eisele that the VHF high pitch interference noise was coming in as they were passing Antigua and astronaut Pogue indicated that that was the same place where the spacecraft had picked up the spurious noise of last night. They are now looking into this to see if we can track it down. At 43 hours 20 minutes into the mission, this is Apollo Control.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 432100 164/1

PAO Minutes into the mission. We're coming up on Canary Islands now, 43:21:59 about 30 seconds from now. We'll see if we get any resolve on what the VHF interference was. Let's listen in.

SC Houston, Apollo 7.

CAP COM Apollo 7, Houston. Go.

SC Roger. I've got a hydrogen purge scheduled here at 44 hours, do you want me to do that or are we doing that just on demand so to speak.

CAP COM Negative. That one has been deleted.

SC Okay, that's that.

CAP COM That's the hydrogen purge at 44 hours, that has been deleted.

SC Roger.

CAP COM Apollo 7, Houston. We will be giving you a CSM and S-IVB state vector update over Carnarvon. We will require accept when you get to Carnarvon and we're estimating AOS Carnarvon at 43 + 57.

SC Apollo 7, understand.

CAP COM Apollo 7, Houston. One minute til LOS at Canary. If you need contact, we have about 2 minutes S-band after that at Madrid.

SC Apollo 7 understand. Thank you.

PAO This is Apollo Control 43 hours 31 minutes into the mission. We have our next station contact coming up which will be Carnarvon, Australia and that will be coming up 43 hours 57 minutes, some 27 or 28 minutes from now. At 43 hours 31 minutes into the mission, this is Apollo Control.

END OF TAPE

pao This is Apollo Control 43 hours 57 minutes into the mission of Apollo 7. We are approaching Australia now and we will be in contact very shortly with Carnarvon. At this pass there will be an MCC update in preparation of the S-IVB tracking which will take place at 44 hours 36 minutes into the mission, so let's monitor this conversation.

CAP COM Apollo 7, Houston. Apollo 7, Houston.  
 Apollo 7, Houston. Apollo 7, Houston. Apollo 7, Houston.  
 Apollo 7, Houston.

SC Houston, Apollo 7.  
 CAP COM Roger. Apollo 7, Houston. How do you read?

SC Loud and clear.  
 CAP COM Roger. If you'll go to accept we'll send up your state vectors.

SC Is on accept.  
 CAP COM And I have a Nav. check here ready to copy.

SC Roger.  
 CAP COM Nav. check reads 044 03 0000 minus 2170 + 12234 1513.

SC Ah, Roger. Could you send that one again.

CAP COM Roger. Nav. check 044 03 0000 minus 2170 + 12234 1513. Read back.

SC Roger. It was 44 03 0000 minus 2170 + 12234 1513.

CAP COM Roger. Readback correct. Okay, Apollo 7 Houston, the computer is yours. We have a little less than two minutes LOS Carnarvon. Request S-band volume up in about one minute or two minutes.

SC Roger.

END OF TAPE

PAO                    This is Apollo Control. We still have one more minute of acquisition at Honeysuckle Creek but it doesn't appear that any more transmission will take place. The Cap Com Pogue here in the Control Center indicated and then we sent up an update from the Control Center for the purpose of preparing the spacecraft for the S-IVB tracking which will take place 44 hours 36 minutes into the mission. That will be in the 28th revolution, it will be coming out of the night side pass, going into the daytime. They will track the S-IVB which will be about 169 nautical miles away and he will track between the Redstone tracking ship and Central American coast. The next point we will have contact with the spacecraft will be the Redstone tracking ship, that will take place at 44 hours 28 minutes into the mission. At 44 14, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 44 hours, 28 minutes into the mission of Apollo 7. We're coming up on acquisition with the Redstone tracking ship in a few seconds. We'll monitor that conversation now.

CAPCOM Apollo 7, Houston through the Redstone standing by. Apollo 7, Houston. One minute LOS Redstone, pick you up at Bahamas in about 12 minutes.

SC Roger Jack, I read you (garble).

CAPCOM You're 5 by Donn.

PAO This is Apollo Control, 44 hours, 32 minutes into the mission. We have just lost contact with the Redstone tracking ship. The next contact will be Grand Bahamas Islands, 44 hours, 43 minutes into the mission, some 8-1/2 - 9 minutes from now. At 44 hours, 36 minutes we will begin the S4B stage tracking at 169 nautical miles distance from the Spacecraft. Now we will go back and have in this period of time - we have here a couple minutes of update of what went on in the last 7-1/2 to 8 hours of the mission. At 37 hours, 2 minutes we had a flight plan update. We also found that everybody has evidence of Astronaut Stafford telling the crew that it was a very good rendezvous that day - yesterday. Astronaut Schirra was reluctant to change his sleep cycle as inquired into from the Control Center by Deke Slayton. He indicated the sleeping bags were not working out too well, that the Astronauts being in their couches with the seat belt buckled were much more comfortable and it worked much better than when they used the sleeping bags. The light weight head-sets, he said, were better than the com carrier. Because with the com carrier, the cable jerks the head around when they move around the cockpit. He indicated they had a problem with the Hasselblad camera, what that problem was - what extend it was I do not know. They finished chlorinating the water again and also Astronaut Schirra indicated that the Exergenie, the exercise device onboard the Spacecraft was "the best - one of the best spacie things we've had in years". He also indicated they were getting around in the Spacecraft very well and they were becoming gymnasts. We had normal inertial measurement unit realignments, we had an indication that Astronaut Schirra took a decongestion tablet, an Actifed tablet plus 2 aspirin, and that Astronaut Cunningham had taken 1 Actifed tablet, and Astronaut Eisele had used some nose cream for his nose. This was at 39 hours, 43 minutes into the mission. There was no particular physical problem indicated beyond the indication that they had taken that medication. At that time we had no biomedical readouts. Later on in the mission at 41 hours, 47 minutes, the biomedical readouts begin coming in to the MCC, satisfactorily.

PAO                    They performed a waste water dump, as they had the day before and there is no problem in the ECS system in dumping the water and having the ECS operate properly. They completed a sextant check well into the tour at 41 hours, 17 minutes and had a flight plan update on the S4B tracking time. That was when we changed the tracking time to 44 hours, 36 minutes into the mission instead of 46-1/2 hours. Due to the fact that the S4B would be in the 169 nautical mile proximity at 44 hours, 36 minutes and it would be too far away a revolution later. This tracking procedure with the S4B will begin very shortly, in fact, it has begun over 1 minute ago. It was indicated at 41 hours, 47 minutes that the O<sub>2</sub>, the oxygen flow rate as monitored at MCC in Houston, was indicating a high flow rate. It was also indicated to the crew at that time, that they should check the waste vent and close it if it were open, which it was. After that was accomplished, the O<sub>2</sub> rate came down satisfactorily and is now riding around .35 lbs per hour.

END OF TAPE

PAO - .35 pounds per hour. Waste vent was turned off, still had onboard that was high at that time, but it did come down to that .35 pounds per hour. The last - one of the last contacts that was indicated by Astronaut Eisele that the VHF high pitch interference noise was coming in. That was indicated to him through - around the Antigua area by Astronaut Pogue that last night the same type of interference came in when he picked up music and voice conversation in that particular area. The crew appears to be in good condition. The spacecraft commander and the LM pilot are in their sleep period and command module Eisele is now - should be in the process of tracking the S-IVB. At 44 hours 39 minutes into the mission, this is Apollo Control.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 444300 169/1

PAO This is Apollo Control, 44 hours, 43 minutes into the mission of Apollo 7. We are now coming up to the acquisition point at Grand Bahama Islands. We'll stand by for any possible conversation.

CAPCOM Apollo 7, Houston; standing by.

SC Roger Jack; I'm doing the B20 navigation right now.

CAPCOM Roger.

SC I'll do a section. Houston, this is Apollo 7.

CAPCOM Go ahead 7.

SC Roger; the (garble) flow is more than in here. It's not (garble). It's a different triangle because some of the background that I see from the base line (garble) but it's still there and you can still track it one more time.

CAPCOM All right. I've been following your marks Don and it looks like you are getting in verbal 649; it looks like you're getting real good marks.

SC Yeah, we (garble) free on the (garble) tracking length within, I guess, a couple of minutes at the last of the nautical time.

CAPCOM Roger.

SC (garble)

CAPCOM Say again Don.

END OF TAPE

PAO This is Apollo Control 44 hours 54 minutes into the mission. We won't have acquisition at Canary Islands for another 2 minutes and 20 seconds or so. Astronaut Eisele indicated to the MCC that the tracking with the sextant, the visual tracking of the S-4B was going along. He said it was not as good as it could be due to bright earth shine. However, it was still there and you could still track it with the sextant. We'll be coming up at Canary Island pass in just a couple of minutes now. At 44 hours 54 minutes this is Apollo Control.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 44:56:36 171/1

PAO This is Apollo Control 44 hours 56 minutes  
35 seconds into the mission of Apollo 7. Canary Islands  
will acquire in about 10 seconds from this time. We will  
monitor that pass.

CAPCOM Apollo 7, Houston, through the Canaries.  
Standing by.

SC Houston.

CAPCOM Go ahead, Donn.

SC Garbled.

CAPCOM I couldn't read that, Donn, you brought  
two by.

SC Garbled.

CAPCOM Donn, we can't quite make that out. We've  
got you here for about another 5 minutes, and maybe signal  
strength will get a little bit better.

CAPCOM Apollo 7, Houston. How do you read now?

SC Garbled.

CAPCOM Okay, Donn, you are a little better there  
on S-band.

SC Okay.

CAPCOM Apollo 7, Houston. You are about 1 minute  
LOS Canaries, we'll pick you up over Carnarvon in about 20 min-  
utes.

SC Roger.

END OF TAPE

PAO This is Apollo Control Houston 45 hours 32 minutes into the flight. Donn Eisele just put in a call to us via Carnarvon. He said he could still observe the flashing lights on the S-IVB. Here is a rundown on the weather today around the world, some of which the crew may be able to observe on this upcoming rev as they go through the Windward Islands area. Taking it from the top: in the west Atlantic recovery area the weather will be partly cloudy to mostly cloudy with a few showers, winds will be mostly easterly, ranging from 10 to 18 knots, sea is 5 feet and the temperature is in the upper 70's. In the eastern Atlantic, weather will be mostly fair, with northeasterly winds of 15 knots, sea is about 3 feet, temperature in the 70's. In the west Pacific landing area, weather will be fair to partly cloudy with a few showers, winds will be mainly northerly 15 knots, seas 5 feet and temperatures in the 60's. In the mid-Pacific, weather will be cloudy with showers, strong easterly winds and moderately rough seas in the more northern landing areas. In the southern part of the zone, weather will be partly cloudy, winds southerly 12 knots, seas 4 feet and temperature in the 70's. An interesting weather feature that the crew may be able to observe today will be a disturbance in its formative stage in an area a few hundred miles east of the Windward Islands in the Atlantic Ocean. The command pilot and the lunar module pilot remain asleep, and the sleep period is programmed to last several more hours. As a matter of fact, it is programmed to last 5 more hours, so it looks like a nice quiet morning ahead of us. At 45 minutes hours and - we do have some tape from Carnarvon and we will play it for you now.

CAPCOM Apollo 7, Houston through Carnarvon, standing by.

SC Roger, Houston. Houston, the lights are still flashing on the S-IVB.

CAPCOM Roger, copy that. And Donn, as we go along here toward the end of our pass, which is about another 8 minutes, we will pick up Honeysuckle, so you will want to turn up your S-band.

SC Okay.

CAPCOM And we have Honeysuckle for about a 9 minute pass, so we will have you for about another 16 minutes, and then you've got a long stretch without anything.

SC Roger.

CAPCOM Apollo 7, Houston. Go ahead.

SC That wasn't us, Jack.

CAPCOM Okay, I'm sorry, Donn.

CAPCOM Apollo 7, Houston. You want to turn up your S-band volume, we are just about to lose you over

CAPCOM                   Carnarvon.  
SC                         Roger.  
CAPCOM                   Donn, we want to make a radio check  
through this backup site at Honeysuckle just to check it  
out.

SC                         Okay, Jack.  
CAPCOM                   Apollo 7, Houston through the Wind  
site, how do you read me?

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 454200 173/1

CAPCOM Apollo 7, Houston through the Wind Sight;  
how do you read?

SC Clear Jack; I'll turn the volume up.

CAPCOM Okay, you're loud and clear here.

SC Sounds pretty good.

CAPCOM Roger; this is a back up sight there in  
Australia.

SC Roger; Jack. I've been looking at this  
horizon preparing for this mid-course navigation business,  
and at night there just isn't any horizon that you can define  
in the sextant at all. There is one in the telescope but I  
don't think that's accurate enough.

CAPCOM Okay.

SC The airglow band or what ever it is, is  
right's drumming. The real earth is so wide that there's no  
way to use it that I can see for navigation.

SC Okay, we copy that.

CAPCOM Don, can you confirm whether you did the  
O2 purge on the fuel cell?

SC Negative; I did not. I was working the  
LAP. I'll do that now.

CAPCOM Okay, real fine.

END OF TAPE

PAO Apollo Control Houston, you're 46 hours,  
13 minutes into the flight. Jack Swigert just put in a  
call to Apollo 7 and gave them a standing by message. We'll  
monitor and see if any conversation developed.

CAPCOM Apollo 7, Houston.

SC Roger, Houston go ahead.

CAPCOM Roger. opposite on the - Donn, and we're  
reading now 87 percent on the waste quantity. We are recommending  
that you initiate the dumping of the waste tank.

SC Roger, opposite on the and 87 percent  
waste water and we've got a good lock with this antenna.

CAPCOM Roger.

SC Jack, record 12 clicks on the water.

CAPCOM Say again. Say again, Donn.

SC I said just record 12 clicks on the  
water gun for me.

CAPCOM Okay.

END OF TAPE

CAPCOM Apollo 7, Houston.  
SC Roger, Houston, go.  
CAPCOM Roger. You have a GO for 47-1.  
SC Roger, GO for 47-1 and log the LMP  
for 12 clicks on the water gun.  
CAPCOM Will do, and good morning.  
SC Good morning.  
SC Hey, Jack, so far this urine dump has been  
pretty doggonned good.  
CAPCOM Apollo 7, Houston, go ahead.  
SC Roger. I said the urine dump system has  
been working beautifully so far.  
CAPCOM Okay, fine. Walt, did you have the VHF  
off just a minute ago?  
SC Yes, I did, I've just gotten up and I  
hadn't turned it on yet.  
CAPCOM Okay, fine.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 464216 176/1

PAO This is Apollo Control 46 hours, 42 minutes into the flight. The crew was advised during a recent pass through the Canary Islands area to scrub, to forget about, some LM mark tracking that was to take place on the West Coast in the next several hours. Clouds apparently obscure the area that was to be observed in a pass across either California or the Western United States. The flight director Glynn Lunney has gone around the room and gotten a very thorough status report from each area, from each console, in the room and other than that, we are witnessing one of the longer scheduled sleep periods of the flight. I show the commander of the Apollo 7, Wally Schirra, and Walt Cunningham are scheduled here for an 11 hour rest sleep period. Walt Cunningham has just talked to us briefly and rather sleepily and probably will drowse on back to sleep. He woke up, had a drink of water, and talked a bit on the last pass. Here is some tape from that pass.

SC We have the preliminary cool (garble) coming up emensely. I don't know how long the water boiler can go without reservicing and if it is not working, it seems to be having an effect on that secondary pump.

CAPCOM Roger. We're having a meeting down here on that very subject. We'll come up to you with a procedure for activating that primary water boiler to take it out.

SC Roger.

CAPCOM Apollo 7, Houston.

SC Go Houston.

CAPCOM We have a flight plan up date here; the land mark tracking that was planned for about 4740, the weather is very, very bad over those areas and we are recommending that, we are asking you to delete that land mark tracking exercise.

SC Roger. I just did a little bit using clouds as unknown landmarks and ran through the program. Seems to work okay. I got through our updates.

CAPCOM Okay, real fine Don. Apollo 7, Houston. We are showing the waste quantity down below at 20 percent now; it looks real good to us here.

SC Roger; we're shutting it off right now.

CAPCOM Okay. Apollo 7, Houston. You're 1 minute LOS Canaries. I'll pick you up in about 14 minutes at Tananarive.

SC Roger.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 465232

177/1

CAPCOM Apollo 7, Houston through Tananarive,  
standing by.

SC Roger.

CAPCOM Apollo 7, Houston. One minute LOS  
Tananarive, Carnarnon in about 9 minutes.

SC Roger.

END OF TAPE

PAO This is Apollo Control Houston, 47  
hours 17 minutes. We are in touch with Apollo 7 via Carnarvon and here is how it's going.

CAPCOM Apollo 7, Houston through Carnarvon,  
standing by.

SC Roger. Jack, could you give us a map  
update?

CAPCOM Will do, we will work it out.

CAPCOM Apollo 7, Houston with your map update.

SC Roger, go.

CAPCOM Rev 29, your GET is a node of 46 + 06 +  
31, longitude will be 129.2 degrees west, the right ascen-  
sion was 06 + 01.

SC Roger. 46 + 06 + 31, 129.2 west.

CAPCOM Roger. That was for Rev 29. You are on  
30 now.

SC Thank you. What's the news this morn-  
ing?

CAPCOM Give you some scores if you would like.

SC GO.

CAPCOM Any particular you interested in?

SC USC, UCLA.

CAPCOM Okay. Walt, Penn State beat UCLA 21 to  
6.

SC Boo.

CAPCOM And USC beat Stanford 27 to 24. Okla-  
homa beat Houston 21 to 17.

SC That's a surprise.

CAPCOM And here is a good one. Ohio State  
beat Purdue 13 to 0.

SC Who beat Purdue?

CAPCOM Ohio State.

CAPCOM Apollo 7, Houston.

SC Roger, Houston.

CAPCOM Roger. Big news in the paper today was  
Apollo meets with second stage.

SC What was that?

CAPCOM That was the big news. Apollo meets  
with second stage, front page stuff.

SC Almost makes it worth it. I tell you,  
you had three of us sweating up here.

CAPCOM Apollo 7, Houston. Do you want to  
turn up your S-band? We are about 1 minute LOS Carnarvon.  
We will pick you up over Honeysuckle and - almost instantane-  
ous there.

SC Will go.

CAPCOM And Apollo 7, just continuing with the  
morning news. Basically, the headlines this morning are

CAPCOM all about the rendezvous. They had another heart transplant in Houston early this morning. It is going well at last report. Have you got the Air Force-Navy score, Air Force over Navy 26 to 20, Southern Cal over Stanford, Ohio State over Purdue, Texas 26 Oklahoma 20, Notre Dame beating Northwestern 27 to 7. Apollo 7, Houston. I have some flight plan updates here for you when you are ready to copy.

SC Roger, wait one. The last score we got was 27 to 7. Copy go.

CAPCOM Okay. At this G&N attitudes control test over Hawaii, we want to make sure that we have the high bit rate before we start it and we acquire Hawaii at 490845. It's a little bit different than is in the flight plan, we just wanted to make sure we had the high bit rate before we started it. The same way with the attitude control test which is at 5040. On Rev 33, the P52 IMU realign at 5130, we would like you to -

SC A little slower, please Jack.

CAPCOM Okay. The IMU realign at 5130, we would like you to use option 3 instead of option 2. We would like to keep the current rev map, and also we would like you to report your gyro torquing angles at the conclusion of this realignment.

SC Roger, got you.

CAPCOM Okay. The - at 52 hours to P20 navigation sunrise will be at 5206. This might be useful for your S-IVB tracking at 320 miles.

SC Roger.

CAPCOM And that's it right now.

SC Okay. I have a question here on the attitude control test. You've got high bit required 20 to 30 minutes on the G&N attitude control test, shortly thereafter you have 10 to 20 minutes of G&N attitude control test. How are we going to get all that and - are they going to get all that dumped so we can get our tape back?

CAPCOM Okay, stand by there. I'll get EECOM on that.

SC Can't you get a lot of that in real time, rather than tapes?

CAPCOM Yes, we can. Stand by, Walt.

CAPCOM Apollo 7, say again.

SC We didn't call.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 474050 179/1

PAO This is Apollo Control Houston 47 hours 40 minutes. We are about to acquire through the ship Huntsville parked off the California coast and we'll monitor that conversation when and if it develops. For your information our orbit this morning is 120 by 155 nautical miles. 120 by 155 miles. And for those keeping precise times of the starts of revolutions, the next Cape crossing time will be at an elapsed time of 47 hours, 54 minutes, 32 seconds. That will be the start of the 31st revolution. Here's the pass.

CAPCOM Apollo 7, Houston. Apollo 7, Houston through Guaymas.

SC Roger.

CAPCOM Roger. We'd like to get some continuing remarks on your habits there; how things are going, your living conditions, sleep and crew condition, and things like that. By the way, Walt, we would like to ask you how you are feeling this morning and if that one actified that you took helped out.

SC Roger, I took one actified; my nose was slightly stuffy last night but it didn't give me any problem while sleeping. I feel fine this morning. I feel in good shape.

CAPCOM Okay, real good news.

SC (garble)

CAPCOM If you feel like you want to take anymore let us know, huh?

SC Roger, all of us are somewhat concerned on the same matter, but Wally seems to be getting a lot better too.

CAPCOM Okay, that's real fine news.

SC (garble) a little while up here, the world is (garble) at this time, we're still (garble) around and no extra time (garble). Little exercise now and then; good sleep.

CAPCOM Okay, that's fine.

SC I got 7 solid hours of sleep last night and Walt had just about 6 and he's still asleep.

CAPCOM Okay, that's fine.

SC (garble) update here. Several things, small things, but most of the things we (garble). Normally on the (garble). The sleeping bag is not, really not effective and (garble) and we all feel kinda that way.

CAPCOM Okay, copy that.

SC Other than that I think it is rather amazing how well and quickly we all went to sleep.

SC Okay.

CAPCOM You might log that - from my personal observation at least, that there's far too much sweet in the diet, and I feel like we have more food than we need. I think Wally feels the same way. Don seems to be eating

most of his though.

CAPCOM Okay.

SC I understand for a couple of days (garble) understand the whole deal in order to keep (garble).

CAPCOM Okay, copy.

SC Another comment is exercise is very, very good, will make you feel better up here. I find that after we're up here, oh about, around the middle of the first day, we started noticing that your lower abdominal muscles feel sore. Always in this seated position and there is certainly enough strain taken off them, and now they kinda want to bunch out and if we exercise once and awhile, we feel a lot better.

CAPCOM That's a good note. Copy that; that's real fine news. And Walt, sometime, Walt and Don, sometime after Wally gets awake and the three of you have a real good chance, we'd like to get a good status check of your windows.

SC Roger; I can give you that now if you'd like.

CAPCOM Okay, let's do.

SC Okay, window number 5 is still I'd say in very good shape. Nothing compared to the pictures I've seen of a bad window in Gemini. Window number 4 is still in good shape, I mean, no concern about taking pictures out of it at all. Window number 3 has been continually deteriorating since about the first day and you can see moisture collected on the inside of the outer pane and kinda spotty in the middle. You can see horizons out of it, but nothing more. Window number 2 is still in good shape. On the left front side of it, you can see a slight amount of discoloration that may eventually work it's way in on it. Window number 1 is similar to window 5 as it seems to have a lot of these little snow flakes settling on it and window number 1 is that close to the earth now and probably is pulling some air.

CAPCOM Okay, copy that. Okay, we'll have you all the way across the States and we'll just keep standing by.

SC Okay. You might make note that I haven't had any problems with food bags yet. Several comments though that the pill is supposed to be broken up and you're doing well when you get the pill inside the bag. I don't know anybody who's got fingers strong enough to break it. Also the chewing gum doesn't, gum doesn't have any velcro on it whenever it shows up and it's turning out that it's pretty significant that everything have a patch of velcro on it.

CAPCOM Okay, we copy that.

END OF TAPE

SC ... we have a (garble) on it.  
CAPCOM Okay, we copy that.  
SC Also, the wet wipe that's packed with  
the fecal bag, they do not have velcro on it and they  
need it.  
CAPCOM Okay.  
SC The temperature inside the cabin has  
been very comfortable. Wally and Donn put on their white  
coveralls. They got out of the suit. I've been in my  
y CWG ever since, and I guess when we start with the show  
business, I'll have to get dressed for it.  
CAPCOM Okay, I copy that.  
CAPCOM Apollo 7 Houston.  
SC Go ahead.  
CAPCOM On the G and N control check that you  
were asking about, over Hawaii, that will be done over the  
States in high bit rate and real time. It won't require  
any DSE operation other than normal.  
SC Roger, we will stand by for your veri-  
fication that you have high bit rate data status.  
CAPCOM Okay, that's real fine.  
PAO This is Apollo Control Houston 48 hours  
04 minutes into the flight. We are out at the far end of  
the ship Vanguard's area of acquisition and we will probably  
have no more contact for this pass. This pass did bring  
us a very complete summary of the crew status on board and  
among the things we heard was that Donn Eisele got 7 solid  
hours, as Walt Cunningham described them, of sleep. Cunning-  
ham said he had 6 hours and he reported that Schirra was  
still sleeping and he was still sleeping. We don't know  
precisely how long Wally Schirra has been asleep. Cunningham  
also reported some improvement in the - in what was beginning  
to be described yesterday as sick bay. Schirra's cold is  
better he said before he went to sleep, and he felt much  
better after taking a decongestant tablet last night before -  
Walt Cunningham took one before he went to sleep. At 48  
hours and 05 minutes into the flight, that is our situation.

END OF TAPE

SC Houston, this is Apollo 7.  
 CAPCOM Go ahead 7.  
 SC Roger. We've got a lock up in the comp  
 cycle program 21. Could you get a G and N bearing (garbled)  
 tell me anything on what to do to correct that? To get  
 out of it?  
 CAPCOM Okay, I understand that you are locked  
 up into program 21? Is that correct?  
 SC Garbled.  
 CAPCOM Okay, standby 7, we're getting somebody  
 to help us down here.  
 SC Roger.  
 CAPCOM Apollo 7, Houston.  
 SC Garbled.  
 CAPCOM Donn, can you tell us at what display  
 you had in the program when you hit the PROCEED?  
 SC Yes, I had - garbled.  
 CAPCOM Could you say again? We missed the  
 display.  
 CAPCOM Apollo 7 Houston. I understand you  
 had the time in there and it was going to intergrate ahead  
 to figure out where you were, and that is the procedure  
 you are talking about?  
 SC That's right.  
 CAPCOM Roger.  
 CAPCOM What time did you put in there, Apollo 7?  
 SC Garbled.  
 PAO Apollo Control Houston here. The comm  
 via Tananarive was a little rocky, but we did make out  
 Donn Eisele reported he had entered a program into the  
 computer and got a CAUTION alarm. Something wasn't going  
 just right with the computer. No big crisis. We will look  
 at it and talk about it some more over Carnarvon I am sure,  
 at which point we will be in - due to acquire there at  
 48 hours 41 minutes into the flight, 7 minutes from now.  
 At 48 hours 34 minutes into the flight, this is Apollo  
 Control Houston.

END OF TAPE

PAO Apollo Control Houston, 48 hours, 42 minutes into the flight. We have just tagged up with the crew through Carnarvon and here is what it sounds like.

COMM ARIA 1, go remote.

CAPCOM Apollo 7, Houston through ARIA 1.

COMM ARIA 1, AOS.

CAPCOM Apollo 7, Houston through ARIA 1.

CAPCOM Apollo 7, Houston through ARIA 1.

CAPCOM Apollo 7, Houston. Apollo 7, Houston.

We're reading you 5 by. Apollo 7, Houston through Carnarvon.

SC Roger, hear you CAPCOM, Houston.

CAPCOM Roger, real fine. Did you come out okay on P21, Donn?

SC Yes, it finally quit intergrating, I'd already asked him to go to PU, so he went straight to PU.

CAPCOM Okay, real fine. I've got some discussion on the primary evaporator to take up with Walt here.

SC He's listening, he's writing.

CAPCOM Okay, there will be a couple of procedures, so you might want to copy this down. What we would like to do is to determine the status of the primary water boiler and therefore, we intend to activate the primary evaporator over the stateside pass this revolution. So when you bring the evaporator on, Walt, we want you to open the back pressure valve manually for 2 seconds, since we're not sure of how much water is in the evaporator and this would minimize any possibility of carrying excess water through the steam duct and possible freezing it. Then on the ground cue over the States, we would like you to first put the glycol evaporator H2O flow switch to AUTO. Second put the glycol evaporator steam pressure to MANUAL. Third, go decrease for 2 seconds. Observe the temperature decay on the primary evaporator outlet. If you don't get any decay, we want you to go decrease for 2 seconds more. If you get a temperature decrease then, wait 30 seconds, place the evaporator steam pressure to AUTO. We'll watch it all from the ground, but if you observe any anomalies in your out of ground contact, we would like you to trouble-shoot per the malfunction procedures recorded on high-bit rate on BSE and report it to the next site. If you want any of this repeated, I'll go over it with you.

SC I could copy about half that fast, and I only got the first three steps, Jack. That pressure open for 2 seconds, do you want me to do that prior to getting into the States?

CAPCOM No, we will do this when we hit the States, so we can watch it here. We will tell you when we've got

CAPCOM good data and then you bring it on, open it for 2 seconds. This will all be on ground cue. I'll read these steps again, a little slower, Walt. First step, H2O flow to AUTO; second, steam pressure to MANUAL; third, decrease steam pressure switch to DECREASE for an additional 2 seconds. Observe a - for a temperature decay on the vap-out temperature. Okay, if you don't get any temperature decay, decrease the steam pressure for 2 additional seconds. Then if you get a temperature decrease on the vap-out temperature, wait 30 seconds then place the glycol evap-out steam pressure to AUTO. Okay, if you get any anomalies and you're out of ground contact, trouble-shoot it per the malfunction procedures, recording it on high bit rate and we'll pick you up at the next site.

SC Roger, Jack, I got step 4. Decrease steam pressure for 2 seconds, watch the glycol evap-out temperature decrease and disconnect set.

CAPCOM Okay, after temp decrease is observed, wait 30 seconds, then place the steam pressure switch to AUTO.

SC I have here decrease something for 2 additional seconds.

CAPCOM Okay, let me go over it again.

SC Two seconds.

CAPCOM Okay, you go to MANUAL, decrease the steam pressure for 2 seconds, that's three. If you don't get any temperature decay, decrease the steam pressure for 2 additional seconds. That's step four.

SC Roger, I understand that if I don't get any pressure decrease - temperature decrease in how long a time period?

CAPCOM About 30 seconds, give it 30 seconds, Walt, to note any temperature change.

SC Open the back pressure for 2 seconds, on your cue, (garble) to AUTO on cue. Steam pressure to MANUAL, decrease pressure for 2 seconds. Watch the glycol evap-out temp decrease, if no temp decrease, in 30 seconds - decrease steam pressure for another 2 seconds. If I get a decrease, I wait 30 seconds and then go to AUTO. Any anomalies, I trouble-shoot.

CAPCOM That's good, you got it. Okay, Apollo 7 you might want to turn your FM volume up, we're about to pick up Honeysuckle here. We'll just be standing by here, we don't have anything special for you.

SC Okay, you might turn (garble) up so that these G and N (garble) transmit.

CAPCOM  
a little garble.

SC

CAPCOM

CAPCOM

CAPCOM

CAPCOM

r a t e.

SC

CAPCOM

I didn't copy that, Donn. You were

And what rate do you want put in.

Okay, standby.

Apollo 7, Houston.

Apollo 7, Houston.

Apollo 7, Houston. Got AGHT or rate,

Rate, Jack

Okay, standby.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 485245

183/1

CAPCOM Apollo 7, Houston.

SC Roger, go Houston.

CAPCOM Okay, Donn. What we would like to have is a spacecraft maneuver rate, a summary rate 1 degree per second or greater DAP we would like you to set 4 degrees per second in the rate.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 490950 184/1

PAO This is Apollo Control Houston, 49 hours  
9 minutes into the flight. Hawaii is due to acquire momentarily  
and let's listen.

CAPCOM Apollo 7, Houston with an update.

CAPCOM Apollo 7, do you read Houston?

SC Roger.

CAPCOM Okay, Don. We have an update on DAP  
rate dead band we'd like you to set in; we would like you  
to set in two tenths of a degree per second for the rate  
dead band for this P and N attitude control test.

SC Okay, I got that in.

CAPCOM Okay, real fine.

SC Jack?

CAPCOM Go ahead.

SC I'm not ready to do that one degree per  
second just yet; using too much fuel. Just go ahead and put  
it in G & N attitude hold at dead band for two tenths rate  
and then let it sit around here as long as you want to look  
at it.

CAPCOM Okay, you want. We copy that. We haven't  
picked up high bit rate here; we'll give you a hack as soon  
as we have high bit rate.

SC Okay. Ready to copy of logdata.

CAPCOM Roger; I'll give you that. Opposite on  
the first. Apollo 7, Houston. We have high bit rate; you  
can search the G & N attitude control test and Walt, I will give  
you the block data.

SC Roger; this is (garble) now.

CAPCOM Okay, block data for block number 6 as  
follows: 033-4C plus 314 minus 1450. 52 plus 05 plus 094335.  
34-3C plus 200 plus 1500. 53 plus 21 plus 42. 4119035-3B  
plus 250 plus 1390. 054 plus 55 plus 07. 4143036 - 4A plus  
250 minus 1659056 plus 46 plus 40. 4785037 - 3A plus 315 plus  
1390058 plus 07 plus 174439. 3038 - 3A plus 283 plus 1374059  
plus 42 plus 35. 4645.

SC Roger, read that code. 033 - 4C. 314  
minus 1450. 0520509, 4335, 34 - 3B plus 200 plus 1500. 053  
plus 21 plus 42. 4119035 - 315 plus 1390058 plus 07 plus  
17. 4439. 38 - 3A plus 283 plus 1374059 plus 12 plus 85  
and 4645; over.

CAPCOM Roger. Walt, we had a transition from  
Hawaii to Huntsville and I lost a little bit of it here.  
The second block was 034 - 3C instead of 3B. And I lost you  
right after 035 - 3B. Could you give me that down to the  
beginning of 037 - 3A?

SC Roger; I'll pick up. 035 - 3B; I got  
your correction. 34 - 3C and 035 - 3B plus 250 plus 1390.  
254 plus 59 plus 07. 4143036 - 4A plus 250 minus 1659056  
plus 46 plus 40. 4785; over.

capcom Roger, that's got it. We copied lines.

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 490950 184/2

CAPCOM I have some time.

END OF TAPE

CAPCOM Apollo 7, Houston.  
SC Go ahead Houston, Apollo 7.  
CAPCOM On this primary evaporator activation we are going to wait until we get a RAD out temperature above 50 before we start it.  
SC Roger. Do you have any idea about what time you want to do that? It doesn't get above 50 until after we have been in a daylight pass most of the time.  
CAPCOM Roger. We are just discussing that now. It looks like the way it's coming up, it's going to be a little bit.  
SC Roger. It hasn't been coming up, if you are talking about the evaporator outlet temperature, I assume. The odds of it coming about 50, it's going to be the latter part of the daylight pass.  
CAPCOM No, we were talking about the rad out temperature, Walt, just so we can make sure that the boiler is going to really work.  
SC Okay, I can show you a rad out temperature now and it's right about 50.  
CAPCOM Okay, stand by here.  
CAPCOM We are only showing a rad out of 42 degrees and we are going to check cal curve right now.  
SC Roger. I am reading 49 about on border.  
SC Right on the nose, 3 point scale. Let's say 45 to 50.  
CAPCOM Okay.  
CAPCOM Apollo 7, Houston.  
SC Go, Houston.  
CAPCOM Okay, Donn. On that rad out, when we are reading 43 now and there is a big spread between your value and ours, and ours is correct according to the cal curve. So it will be a little bit yet before we get to activation of the evaporator.  
SC Okay.  
SC Houston, Apollo 7.  
CAPCOM Go ahead, 7.  
SC Do you have VHF now?  
CAPCOM Affirmative. We are receiving VHF, we are simultaneous on constant.  
SC Okay, fine. Thought for a while it seemed you were really on S-band.  
CAPCOM Apollo 7 can you tell us what direction you are pointed relative to the sun?  
SC Why don't you read our gimbal angles

SC and figure it out? You can probably  
do it better than we can.

CAPCOM Roger.

SC It's coming in the left side window,  
it's a little bit forward of it.

CAPCOM Okay.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston, we are going to  
delay activation of the primary evaporator until Ascension.  
We will contact at Ascension in approximately 8 minutes.

CAPCOM Apollo 7, Houston. Thirty seconds  
to LOS Antigua.

END OF TAPE

CAPCOM Apollo 7, Houston through Ascension.  
Apollo 7, Houston through Ascension.

SC Roger. This is Apollo 7. We're standing by for your evaporator procedure. I can (cut off)

CAPCOM Okay, Wall. we're going to wait until we get high bit rate here. We've got a keyhole effect which is going to delay our high bit rate for minute or so, and then we'll be ready to start.

SC Roger.

CAPCOM Apollo 7, Houston. We're ready to start on the primary evaporator test. You can open the back-pressure valve manually for 2 seconds.

SC Are you ready to receive this procedure?

CAPCOM Okay. You want to put your water valve to auto?

SC Want me to decrease for 2 seconds first don't you?

CAPCOM Okay. Wall we want to go auto first on the water valve.

SC (Garble) S-band.

CAPCOM Okay. Walt, read you 5 by. You want to (cut off)

SC The depressure came down to .15 and bicarb operator outlet pressure is coming down.

CAPCOM Okay. Understand.

SC I am going to go auto on the steam pressure because the bicarb operator temperature is down.

CAPCOM Okay. We'd like you to hold it for 15 seconds.

SC Do what?

CAPCOM Hold off on putting the steam pressure valve to auto for 15 seconds here.

SC I had it in there - I just took it back.

CAPCOM Okay.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 495150 187/1

CAPCOM Okay, Apollo 7, you can put the steam valve pressure to AUTO now.

SC Roger; it's in order. (garble) test is reading to you onboard.

capcom Roger; we copy. Apollo 7, Houston, we are about 1 minute LOS; we would like you to continue this procedure. Watch the glycol evap out temperature. If you get any anomalies then record it on the high bit rate; we'll pick you up over Tananarive.

SC Roger. What time for Canaries?

CAPCOM Tananarive will be - 50 hours, 1 minute.

Okay.

PAO This is Apollo Control Houston, 49 hours 53 minutes into the flight. I doubt that there will be additional conversation through Ascension. We have been up now since 49 hours and 10 minutes into the flight, in other words, 43 minutes during this swing from Hawaii through Ascension. While there wasn't talk during the entire period, it was a busy period. As we got into the evaporator test to see how well that element of the cooling is working. Some information on the consumables that remains onboard, 755 pounds of propellant in the RCS tanks, the combined tankage reading 755, that is opposed to a take off propellant weight of 1 307 pounds. In the SPS system there remains 8 266 pounds against the take off weight of 9 555 pounds. The oxygen summary is 82 percent remaining in the oxygen tanks onboard I don't have the figure in pounds. 82 percent in each two tanks. At 49 hours, 54 minutes into the flight, this is Apollo Control in Houston.

END OF TAPE

PAO Apollo Control here at 50 hours 8 minutes into the flight. Via Tananarive we had this conversation.

CAPCOM Apollo 7 Houston through Tananarive.

SC Roger, Bob, and the water boiler seems to be operating normally now.

CAPCOM Okay, Real fine.

SC It evaporated normally after we (garbled)

CAPCOM I think he said it evaporated normally since he left Ascension. I wonder if he is evaporating now.

CAPCOM Apollo 7, Houston. 1 minute LOS Tananarive. We pick up ARIA 1 in about 3 minutes. We'll have continuous coverage through Carnarvon.

SC (garbled) Roger.

SC Apollo 7.

CAPCOM Go ahead 7.

PAO And this is Apollo Control. That concluded the conversation and while ARIA is available, apparently there are no plans to carry any further conversations with the crew. Earlier we gave you a citation from the amount of - the percentage of oxygen remaining, 82 percent, in pounds that goes like this: tank 1, 265 pounds of oxygen; tank 2, 268. At 50 hours and 10 minutes into the flight, this is Apollo Control Houston.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 501740 189/1

PAO Apollo Control Houston here, 50 hours,  
17 minutes. We are talking to apollo 7 through Carnarvon.  
SC Houston, Apollo 7.  
CAPCOM Go ahead.  
SC In the flight plan we have (garble) about  
5 plus 45 (garble) control 7.  
CAPCOM Roger.  
SC Took us 20 minutes. We performed that dur-  
ing the tracking exercise for the rendezvous. I'd like to  
hold off that type of PPO until after we have our third burn.  
CAPCOM Okay, stand by.  
SC Roger.  
CAPCOM Apollo 7, Houston. We concur on delaying  
the attitude controls test until after burn 3.  
SC Roger; I think we met the requirement Jack,  
but if we can check the data from the previous revs, we prob-  
ably didn't get to do that one.  
CAPCOM All right; let's do that.  
CAPCOM We'll check it 7. Apollo 7, Houston.  
SC Go ahead.  
CAPCOM We're trying to get an inertial attitude  
hold angle that we would like you to go to, to further eval-  
uate this primary evaporator and we'll try to get you these  
angles early so you can take your time maneuvering there.  
What we want to do is heat up these radiators as much as  
possible and it won't have to be a tight attitude hold at all,  
just want to get as maximum a heat on the radiator as we  
can to give us a lot of confidence in that primary evaporator.  
SC Roger; what type of time are you  
talking about?  
CAPCOM Next state side pass.  
SC All go.  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Roger; we have a roll pitch and yaw  
gimbal angle of, for this evaporator evaluation.  
SC Good.  
CAPCOM Okay, we roll 218 pitch 129 yaw 18.  
SC Jack, is that 18 degrees?  
CAPCOM Roger; 018, excuse me. Yaw is 018. You  
can maneuver there as slowly as possible and set up the max  
dead band and we'll evaluate this over the States.  
SC Okay, what time would you like this  
attitude?  
CAPCOM For the day pass Wally; over the States.  
SC Okay, it'll be approximately 50 hours and  
45 minutes.  
CAPCOM Okay, real fine.  
SC What we got 218 roll, 129 pitch and 018  
yaw.

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 501740 189/2

yaw.

CAPCOM That's 218 roll, 129 pitch, 018 yaw.

SC Copied that.

CAPCOM Okay. And 7, we have finished with the loads, we have verified them with the computers; you're -

SC Roger. Jack, do you have an update for us?

CAPCOM Say again.

SC Do you have an update for us after that (garble) load?

capcom Roger; that was TSM and S4B.

SC Roger; don't we do the update to (garble)?

CAPCOM Okay; stand by. I have your nav check; are you ready to copy?

SC Okay, go.

CAPCOM Okay. Sextant track time 051 plus 35 plus 0000 minus 2779 plus 02505. 1549.

SC Roger; 051350000 minus 2779 plus 02505, 1549; over.

CAPCOM Roger.

SC Correct read back?

CAPCOM That's a correct read back; that's 154.9.

SC 154.9; roger and copy that.

CAPCOM Okay.

SC Okay, it looks like we're right on, doesn't it?

CAPCOM Stand by.

SC (garble) updates.

END OF TAPE

PAO Apollo Control here at 50 hours 42 minutes into the flight. Momentarily we expect to be talking to Apollo 7 through Hawaii. Lets listen.

CAPCOM Apollo 7 Houston through Hawaii.

SC Roger Houston. We're drifting in attitude now.

CAPCOM Roger, real fine. Wally, when we hit the states we'd like to switch over to a MIN dead band as long as we are holding attitude for this radiator- or evaporated evaluation. We'd like to switch over to a MIN dead band and we'll kill that DTO that's in an attitude control test at the same time. I will give you a call over California when we would like to set in the MIN rate.

SC The dead band is (garbled) it's about 5 pounds an hour and I have done that during the rendezvous maneuver.

CAPCOM Roger. We understand that. This will only be for a minimum of 10 minutes.

SC Bill, that's about one pound.

CAPCOM I mean -

SC Prior to the SPS burns about 5 to 10 minutes each. (garbled)

SC And by the way, Houston, Hawaii is part of the United States now.

CAPCOM Roger, I understand, Wally.

SC You are showing your age, Jack.

SC Houston, this is Apollo 7.

CAPCOM Go ahead 7.

SC There is something we have never made note of before. It happened during spacecraft tests and does here as well. When the 12th maneuver is put in, the gimbal drives reflect that maneuver even though the clutch current is off. Plus or minus about a half a degree.

CAPCOM Roger, I understand.

SC It's something that normally might surprise subsequent crews.

CAPCOM Okay, we copy.

SC No problem.

SC Houston, the reason we are resisting burning up fuel is that we're not really -

SC We just had a good view of a contrail enroute to Hawaii.

CAPCOM Roger. Opposite omni, 7.

SC Roger.

CAPCOM Wally, we are having some more discussion on that MIN rate over the states here. We'll let you know.

SC We're right on the (garbled) making an orbit.

CAPCOM Roger, we understand.

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 504200

190/2

SC  
SC

It's still two updates later.  
On it 02, we log valid range.

END OF TAPE

CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Roger. We still want you to go ahead and fit in that min rate, complete this G&N attitude control test. This will be the minimum cost fuel-wise right now.  
SC Roger. The (garble) you got here is exactly the same.  
CAPCOM Roger, we understand.  
SC Okay. I don't think you could understand real well, we are still testing.  
CAPCOM Roger, understand.  
SC (garble) be prepared to debrief on this subject when we get back.  
CAPCOM Yes sir.  
CAPCOM Roger, we are timing right now. We will give you a mark in 10 minutes and the test will be complete.  
SC Roger.  
SC Deke, you look like wide open today.  
CAPCOM Roger.  
SC (garble) a little (garble) off shore. Like you have about three or four (garble) today.  
CAPCOM Okay, I haven't been outside for about 6 hours so I don't know.  
SC Jack, after this G&N burn, do you want us to hold it and let's see if the (garble)  
CAPCOM Roger, Wally. After we get through this, you've got about 4 minutes left, then hold attitude in the cheapest way possible.  
SC Roger.  
CAPCOM And as soon as we hit the night pass, you are on your own.  
SC Pearl Harbor looked beautiful today.  
CAPCOM Say again, Wally.  
SC I said the Harbor looked beautiful today. We took a lot of good pictures with the Hasselblad we got one of Houston, one of Tampa, that's about the rate. It takes about 3 minutes to recock it.  
CAPCOM Roger, we copy.  
SC Probably the loop inside is jamming it up. It's in the box itself, not in the main shutter mechanism and not in the magazine.  
CAPCOM Okay, we copy that.  
SC We recommend carrying at least two of these boxes along and the accessories to go with them.  
CAPCOM Roger, we copy that.  
SC That's it.

SC Houston, a lot of water hasn't been boiling since we - have you been putting all the heat on the radiator or (garble)

CAPCOM We've been trying to get the max heat on the radiator, we expect it to start boiling here. We are showing a rad out now of 50.

SC Roger, so am I, but my glycol evaporator outlet sensors still seeing 48. Jack, give me a reading when we go off this DAP control.

CAPCOM Roger. You have got about a minute and three-quarters.

SC Okay, then I'll (garble). Just a second, she's starting to boil. Let (garble)

CAPCOM Roger, we concur.

SC How long will that stay in the SCS monitor?

CAPCOM Stand by one.

SC Are you observing my steam pressure now?

CAPCOM For move in, darkness occurs, Wally about 5120 5, 5125.

SC Then we are going to stop holding attitude, right?

CAPCOM Affirmative.

SC Okay.

SC Houston, Apollo 7. Are you reading my primary evaporator now?

CAPCOM Affirmative, 7.

SC Roger. You got the evaporator outlet temperature overshoot all the way down to about 34.

CAPCOM We confirm, and we show it coming back up.

CAPCOM Okay Apollo 7, we've completed 10 minutes in min deadband, you can come out of min deadband and go to the cheapest way possible for attitude hold.

SC Roger, SCS.

CAPCOM Apollo 7, Houston.

SC This is Apollo 7, go ahead.

CAPCOM Roger. We feel that for all purposes your primary evaporator is working normally.

You can discontinue attitude holding.

SC Roger, all channels off.

CAPCOM Roger.

SC Shall I go ahead and operate the glycol evaporator then and see if we have a reoccurrence of the earlier trouble?

CAPCOM Affirmative and we will watch it too.

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 505200

191/3

SC

Thank you.

END OF TAPE

PAO                    This is Apollo Control Houston, 51 hours, 15 minutes into the flight. You heard during that pass that any and all consideration - any and all concerns about the primary evaporator and suspected problems have been put to bed. The primary evaporator was pronounced working normally in all respects by the ground and by the crew in space. We also heard Wally Schirra report he had gotten several good pictures. He said he thought he got a good shot of Houston and a good shot of Tampa, Florida, and explained some difficulty they had had with a mechanism on the camera, which I didn't fully understand. At - with the Spacecraft half-way across the Atlantic Ocean, we're 51 hours, 16 minutes into the flight, on the 33rd revolution. This is Apollo Control Houston.

END OF TAPE

PAO Apollo Control here, 51 hours, 29 minutes from Ascension, we have this conversation.

CAPCOM Apollo 7, Houston through Ascension.

SC Apollo 7, Roger, line clear.

CAPCOM We're standing by.

SC Houston, Apollo 7, do you read?

CAPCOM I read you 5 by. we're standing by.

SC I took the camera apart and used some nose cream and cleaned up some of the inner gears and it looks like it is working alright now.

CAPCOM Roger, copy, and I have a flight plan update on that - the pad for the star - sextant star count whenever you are ready to copy.

SC Go ahead with your flight update plan, Jack.

CAPCOM Okay, GETFR will be 53 plus 36, roll will be 40, pitch will be 92, delay that roll. Roll will be 4, pitch will be 92, yaw will be 35 niner. GET of sunset minus 12 will be 54 plus 18, roll will be 184, pitch 97, yaw 35 niner.

SC Roger, GET sunrise 53 plus 36, attitude 004 for roll, pitch 092, yaw 35 niner. Sunset minus 12 minutes, will be 54 plus 18, roll 184, pitch 097, yaw 35 niner.

CAPCOM Roger, that's correct.

SC Okay. Houston, Apollo 7.

CAPCOM Go ahead, Wally.

SC Roger, we still have reservations about the SPS engine. It looks good to us, so far, but we don't have any data from you though.

CAPCOM Okay, standby.

CAPCOM Apollo 7, Houston.

SC Go ahead

CAPCOM Wally, could you confirm your reservations about the SPS engine that have to do with the GPI movement that you observed.

SC (garble) we had a mission rule with the Flight Director, that we would not go into the SMS which is reserved until we knew that we had a good SPS engine.

CAPCOM Okay, we copy.

SC Roger, I'd like one more thing.

CAPCOM Okay.

SC (garble)

CAPCOM We understand. Standby (garble).

END OF TAPE

CAPCOM Apollo 7, Houston, through Tananarive.  
SC Roger. We got a report (garble) for the alignment, minus .420 minus .175 plus .149 (garbled).  
CAPCOM Roger, Donn, I've got a .175 a .149, I didn't catch the first one.  
SC The first one was a minus .420.  
CAPCOM .420 a triangle difference of 4 balls 1 and say again to start.  
SC (garbled) and on the angles the first was a minus, second was a minus, the third was a plus.  
CAPCOM Roger, copy, and Walt, is Wally on the line? Apollo 7 Houston.  
SC Schirra speaking.  
CAPCOM Roger. About the SPS problem, after discussing down here, our feeling is that the SPS is GO. However, we have a DAP service module RCS deorbit capability at the present time, and we are within 10 feet per second of an sps service module RCS deorbit capability.  
SC Roger. That was our figuring too. We'd like to hold that reserve as long as possible. After the full turn we'll get to the lower (garble), I think we'll sum up afterwards.  
CAPCOM Wally, we aren't able to read you this time with that last transmission over Carnarvon.  
SC Roger.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68. GET: 520950

194/2

CAPCOM            Okay, Rev 33 TEP is a node 52 plus 04  
plus 32 Longitude 139.2 degrees east, right ascension 05  
plus 54.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 515150 195/1

PAO And this is Apollo Control, 51 hours, 51 minutes into the flight. We will be in touch with the spacecraft through Carnarvon; there goes the first call.

SC (garble) on the (garble)

CAPCOM Roger Apollo 7; we don't have data yet.

SC Roger. (garble) hold a second. This is (garble) angle.

SC Okay, stand by. I did the final (garble) test and used (garble) triangle difference by loads, (garble) angles plus OP1 minus 049 plus 017; over.

CAPCOM Okay, copy that Walt.

SC Houston.

capcom Apollo 7, Houston.

SC Go ahead.

CAPCOM Give me a GEP, an approximate GEP, that you did at final line so that we can compute some general drip rates.

SC Roger. The line is considered at about 51 40.

CAPCOM 51 40.

SC Affirmative.

CAPCOM Roger, copy.

SC Is this the first one or the second one Jack; he didn't tell us.

CAPCOM Stand by.

SC The first one was about 51 40. I think that's the one you want for your drip check.

CAPCOM Okay, 7, the first one 51 40 will be fine.

SC Roger; over.

CAPCOM Apollo 7, Houston. Do you also have the time you did the final line check so we can get that one too?

SC That was 51 51.

CAPCOM Okay.

SC (garble)

CAPCOM Roger; copy that.

CAPCOM Apollo 7, Houston. We feel that on the basis of what Don did on the daylight align test, that you can delete the P51 which comes at 55 plus 00 in the flight plan; do you concur?

SC Affirmative. Roger; we concur.

CAPCOM Okay, you can delete it.

SC Roger. Jack, if we happen to be in the phase of a latitude, I might take another crack at it, but -

CAPCOM That's fine with us.

SC Okay. Houston, Apollo 7.

CAPCOM Go ahead 7.

SC Roger. When you talk about the SPS results now that you had observed on the ground?

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 515150 195/2

CAPCOM Go ahead.  
SC What did you observe?  
CAPCOM Okay, stand by.  
CAPCOM Apollo 7 Houston. On the, we re-looked  
at all the strip charts on the SPS operation, small valves,  
the temperatures, everything on the SPS appears normal.  
SC Was that a change of (garble)  
CAPCOM Okay -  
SC With permission, I would like to add this.  
(garble) burn before I give out the SMRS -  
CAPCOM Say again on the SPS number 3 burn?  
SC I would like to get the SPS number 3 grid  
in before I eat into the SMRCS fuel budget.  
CAPCOM Roger; we're gonna look at that.  
SC Roger.  
CAPCOM We are about 1 minute LOS. Carnarvon  
will pick you up in Guam in about 5 minutes.  
SC Roger.  
PAO And we're just about, or have lost signal  
through Carnarvon so we shut the wire down now; we have had  
additional discussion here regarding propellant paths. You  
recall that this is a subject that is difficult to understand  
without looking at the charts but we have essentially two  
ways to leave orbit and return to earth. One through what  
we call the hybrid mode, using the RCS thrusters and the  
other using the SPS engine and we are slightly under one red line  
but the controllers here feel like we are more than adequate  
in the other mode and that has been a point under discussion  
between the crew and the control center these last several  
passes. At 51 hours, 1 minute into the flight, this is  
Apollo Control Houston.

END OF TAPE

PAO This is Apollo Control in Houston 52 hours 10 minutes into the flight. We are in touch with the spacecraft through Guam and here is how it sounds.

CAPCOM Apollo 7, Houston.

SC Apollo 7.

CAPCOM Roger, read you 5 by.

SC Garbled

CAPCOM Say again

SC Navigate by sunrise and the sextant.

CAPCOM Roger. If you decide to delete the P52 realine at 55 hours in the flight plan you may go ahead with your G and N and SPS power down early at your option.

SC Houston, Apollo 7.

CAPCOM Go ahead.

SC This will break you up. We're having competition to see who can get the exergonies first.

CAPCOM Roger. I say again that if you decide to delete that P52 realine at 55 plus 00 you can go ahead and power down the G and N and SPS early at your option.

SC Roger, understand that, thank you.

CAPCOM Go ahead 7.

SC Roger. We have S-4B at this time through the sextant.

CAPCOM Roger.

SC How far away is it now, Jack?

CAPCOM Standby, I'll get it.

SC Great.

CAPCOM Standby, Walt, we'll get it up to you.

SC Jack, that small panel lights are -

CAPCOM Say again, 7.

SC The small panel lights that were not lighted was the (garble) panel.

CAPCOM Roger, copy.

SC Minus 0 (garbled)

CAPCOM Apollo 7, Houston. The S-4B is 312 miles away.

SC Roger, we're seeing it loud and clear in here. I don't know if it will hold up throughout the entire day pass because when I get this orange background from the 6 liner pad it might blot it out, but I'll keep you advised.

CAPCOM Okay. You are 1 minute LOS Guam, Hawaii in 7 minutes.

SC Roger (garbled)

CAPCOM Roger, we'll get you one. If I lose you here we'll get it to you over Hawaii.

SC Roger.

CAPCOM Apollo 7, ready with the update?

SC Roger.

APOLLO 7 MISSION COMMENTARY, 10,13,68, GET: 520950

196/2

CAPCOM                    Rev 33 TET of the node 52 plus 04 plus  
32. Longitude 139.2 degrees east. Right ascension 05 plus  
54.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 521750 197/1

PAO This is Apollo Control Houston, 52 hours, 17 minutes. We're about to acquire through Hawaii. We'll standby for that pass.

CAPCOM Apollo 7, Houston through Hawaii.

SC Hello Houston, Roger (Garble) that SIVB I think what happened, is the auto optics quit working or it wasn't working right and I saw it go out on top of the sextant and I never was able to recover it.

CAPCOM Roger, Copy.

SC Up to the time it happened, it seemed to be working pretty well I had done a few marks and it seemed to be pulling it in a little closer to the center although not as well as I had done on the previous run.

CAPCOM Okay, we copy that.

SC I think it deserves a pretty good plus so far.

CAPCOM Apollo 7, i didn't copy that last part.

SC Roger, this is CDR I say it deserves a pretty good plus so far.

CAPCOM Okay, real fine.

SC Don't want the boys in Boston to get too excited yet.

CAPCOM Roger.

HTV Huntsville AOS.

CAPCOM Go ahead 7.

SC Negative transmission.

CAPCOM Alright.

HTC Huntsville cannot achieve a valid range. and two wheel log AGC too low, AGC too low.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 522750 198/1

SC (garble) mark 20 California.  
CAPCOM Roger; copy.  
CAPCOM Wally, coming over Texas and about in 3  
or 4 minutes we'd like you to turn your S band volume up  
and we're going to be transmitting S band only.  
SC Roger; at 21 East Coast, West Coast,  
California, is due to arrive us shortly.  
CAPCOM Okay.  
SC Give us a call when you want the volume  
up Jack and -  
CAPCOM Okay, you can turn S band volume up now  
we are just about to acquire Texas.  
SC Correction on (garble) upper third of  
California.  
CAPCOM Roger.  
SC The Hasselblad is working fine with a  
combination of oral grease removal and nose cream.  
CAPCOM Roger; copy that. Apollo 7, Houston,  
transmitting S band for back up check.  
SC Roger; we read you loud and clear.  
CAPCOM You are fine.  
SC - looks very nice today; a lot of star  
2, it looks like pretty good weather for the olympics.  
capcom Roger; copy that.  
SC (garble) 26 (garble) was a straight shot  
down at the Coast of Mexico. Just south of Monterrey.  
CAPCOM Roger; copy.  
SC Looks like a nice day to be on the beach.  
CAPCOM It sure does.  
SC What's your temperature down there today?  
CAPCOM It's pretty nice down here; we had fog  
in the morning.  
SC Roger. Magazine Q 24; Eastern Coast.  
Houston, this is your captain speaking and we are flying  
across the Gulf of Mexico. We are cleared to the Yucatan  
Peninsula. The west coast of the Yucatan looks loud and clear  
and we will give you a report on clouds on arrival.  
CAPCOM Okay, and we are going back to VHF in  
just a few minutes here so you can turn the S bands on in  
the ground in just a few minutes.  
SC Roger. 35 and 26 West Coast on VHF; we  
are crossing now.  
CAPCOM Roger; copy.  
SC The magazine we are referring to is Q  
for queen.  
CAPCOM Roger.

END OF TAPE

SC Garbled  
SC Garbled. We're here in northeastern  
South America.  
CAPCOM Roger, copy.  
SC Sounds like you got some scenic music  
coming up.  
CAPCOM Apollo 7, Houston. Could we get you  
to switch the BIOMED switch to the CDR?  
SC Fools rush in where Angels fear to tread.  
CAPCOM Roger we copy your switch position.  
SC Roger. Are you playing music, Jack?  
CAPCOM Negative.  
SC There's a song, "Fools rush in where  
angels fear to tread." That's why the remark. We have  
some very good music up here.  
CAPCOM It isn't me.  
SC Okay. How's the radar at this time?  
SC Okay. Houston radio station, just heard  
the call, it's FM probably.  
CAPCOM Roger, read your copy.  
SC You might call around twon and find out  
who played "Fools rush in where angels fear to tread" and about  
2 hours and 26 minutes - 25 minutes.  
CAPCOM Roger, we copy

END OF TAPE

PAO                    This is Apollo Control 52 hours 56  
minutes into the mission. Apollo 7 is at Ascension now.  
We will stand by through pass.

CAPCOM                Apollo 7, Houston standing by, Ascen-  
sion.

SC                     Roger, we read you loud and clear.

CAPCOM                Roger.

PAO                    This is Apollo Control. Ascension  
has LOS now. In the Control Center, we are in the process  
of changing shifts, Flight Controllers from Glenn Lunney's  
team are briefing their counterpart on the Gene Krantz  
team. Astronaut Ron Evans has relieved Astronaut Jack  
Swigert as CAPCOM, so at 53 hours 02 minutes, this is  
Mission Control Houston.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 53:12:50

201/1

PAO This is Apollo Control, 53 hours,  
12 minutes. Apollo 7 is over Tananarive getting an update  
at this time.

CAPCOM H2 fuel cell purge.  
SC Roger. That's 54 for a full view and  
hydrogen purge at 5500.

CAPCOM Roger, at 57 plus 50 - 02 oxygen fuel  
cell purge.

SC Roger, 02 purge at 5750.

CAPCOM Roger, end of update.

END OF TAPE

PAO This is Apollo Control 54:29 into the mission. We have about 6 1/2 minutes of tape from the tracking station passes during the news conference. Start back at the Guam station. The signal strength is a little bit low, but CMP Donn Eisele does discuss briefly during the Guam pass the telescope star count that he is doing. Indicates that he is able to see some stars, at least a little while after they come out of the darkness. We will play that tape now.

GWM 53:30:00, HAW 535445; HTV 540220,  
GYM 540330; TEX 540721

CAPCOM Apollo 7, Houston standing by Guam.

GUAM Roger.

CAPCOM Apollo 7, Houston. Were you calling?

(Pause) Say again, Wally. (Pause) Roger, understand.

(Pause) Roger. (Apparently Capcom is able to read Apollo 7, but we hear nothing, not even garble.)

CAPCOM And you say the count is 50? (Pause)  
Greater than 50? Roger?

SC Standby just one minute. We're into the telescope, all around the edge and there is a big broad band of light across the center and a blob down at the bottom and this light is slowly increasing in intensity and I suspect that in a few minutes it's gonna blot out the whole field of view.

CAPCOM Roger.

SC Roger, at 44 I see 10 stars. I can see Orion and the four corner stars and Sirius and a handful of others scattered around. There's about 10-12 stars.

CAPCOM Roger. 30 seconds LOS

SC Roger. We are with you.

CAPCOM Apollo 7, Houston, request onboard BAT C voltage at your convenience.

SC Roger, I got battery C, 37 volts.

CAPCOM Roger. 37.

SC Has anybody taken a good look at the total load we have on bat A, bat D, I know we didn't get back as much as we expected to on battery A yesterday.

CAPCOM That's affirmative, Walt. We are looking at it.

SC Hey, Ron --

CAPCOM Go-

SC I guess I'm leaning toward another battery charge if necessary a little further down the pike.

CAPCOM I see what you are saying. You think that we may require another battery charge later on sometime.

SC Houston, Apollo 7.  
 CAPCOM Houston. Go.  
 SC Roger, we are standing by our second  
 (garble) at 54 hours into the flight.  
 CAPCOM Roger. Your second what?  
 SC Our second bag of lithium. Incidentally  
 you might note that the ORDEAL storage box, after the ORDEAL  
 is out, and closed up again, makes a nice little locker  
 for stuffing things into. The little hole that's open -  
 you can stuff it into, then later dump it into the empty  
 tissue box.  
 CAPCOM Roger.  
 \*(Several short bursts of garble)  
 SC Houston, Apollo 7. Frame 34 on magazine  
 2. (garble) approaching the western coast of Mexico.)  
 CAPCOM Say again, Walt. Opposite omni.  
 SC Approaching west Mexico, frame 34,  
 magazine 2, cloud formation. Frame 30, Baja California,  
 frame 31 will be of LaPaz.  
 CAPCOM Apollo 7, Houston. Say again.  
 SC Frame 30, Baja California. Frame 31,  
 LaPaz.  
 CAPCOM Roger.  
 SC Frame 32, Puerto Vallarta  
 CAPCOM Roger.  
 SC (garble)  
 CAPCOM Apollo 7, Houston. 30 seconds LOS.  
 Tananarive at 46 minutes.  
 PAO Apollo Control at 54 hours, 37 minutes.  
 That is the end of the tape. Apollo 7 has started its  
 34th revolution a little while ago. About 10 minutes away  
 from acquisition at Tananarive now. We will come back up at  
 that time.

END OF TAPE

PAO This is Apollo Control 54 hours 46 minutes into the mission. Tananarive is about to acquire Apollo 7. We'll monitor this pass.

CAPCOM Apollo - Apollo 7 Houston, Tananarive standing by.

SC Roger. We've logged another food-bag failure and we powered down at 5435 for a drifting site configuration

CAPCOM Say again time, Walt.

SC At 5435 we powered down to the drifting site configuration and I ordered a food-bag failure report.

CAPCOM Roger. How did the second one fail?

SC I Had the second one and it was A3, AOB to the LSP, the chocolate pudding, but the failure occurred at the spout where it comes out near the end and it seems to be giving away near the (garbled).

CAPCOM Walt, I got part of that, but I couldn't get it all. Chocolate pudding bag failed, but I'm not sure how yet.

SC It failed at the yank end about where the external seam would have made it impossible to eat it.

CAPCOM Roger, I understand now.

SC Chocolate pudding (garbled)

CAPCOM Roger.

SC That last pass was on the western coast of Mexico, we got several nice pictures of the harbor at Acapulco, Mexico.

CAPCOM Roger.

SC Houston Apollo 7

CAPCOM Roger, go ahead.

SC Roger. I'd like to give you a report on the way we're eating. We're eating I'd say, as much as we can put down. Which is about two meals a day, so far.

CAPCOM Roger.

SC I'd better change that to two and a half meals a day.

CAPCOM Roger, Donn is a big eater.

SC Say it again.

CAPCOM Roger. Donn is a big eater.

SC That's a fact.

SC We've been over Mexico now, about 30 minutes of time, and doubled the (garble) on it, and there's not much more we can do. If we're not hungry we don't eat. I think we're all feeling chipper (garble).

CAPCOM Roger. That's good.

SC A subject that we are concerned about is the chlorination of the drinking water. We're drinking about as much as we can.

SC I'd say that we've drunk enough water to lower the quantity sufficiently to have a chlorine check.

CAPCOM Say that again, Wally.

CAPCOM Apolly 7 Houston. Say that again about the Chlorine and potable water.

SC The advisability of adhering to our schedule on the potable water

CAPCOM Apollo 7 okay Houston. 30 seconds to LOS. Mercury at 09.

PAO Mission Control Houston. We've had LOS at Tananarive. Much of that transmission was a little hard to copy. The quality wasn't too good. So the high points we were able to copy reported a second food-bag failure - the chocolate pudding bag. They reported that they had powered down as scheduled on the flight plan. Walt Cunningham reported getting some good pictures while on the West Coast of Mexico. And the commander, Wally Schirra, reports that they've been eating as much as they can get down and that works out to about two meals a day. He also reported that his cold has improved considerably. At 54 hours 56 minutes this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 55 hours, 10 minutes into the mission. The Mercury tracking ship has just acquired Apollo 7. We'll stand by for any conversation.

CAPCOM Apollo 7, Houston through Mercury.

SC Roger. Do you read that?

CAPCOM Roger, you're a lot better this time. Can you say again your question about the potable water chlorination?

SC Yeh, Ron, we - adding chlorine to the water quantity and has that decreased since we've been - taken off practically. And if the taste of the chlorine has not bothered us yet. And we feel we haven't taken enough water out of there to warrant adding chlorine on a 24 hour basis.

CAPCOM Okay, understand your question now, and we'll check into it then.

SC Roger.

CAPCOM Apollo 7, Houston output on me.

SC Roger.

SC This is Apollo 7.

CAPCOM Houston, Go.

SC At approximately 20 minutes ago, the time rater evaporator ran into the same kind of problem it had earlier in the flight. The steam pressure went all the way down peg low and could not increase it by going to manual and the increase switch. I reserviced it for 2 minutes, and operated manually for another couple of minutes, and finally went back to auto auto. And it's been running fine for the last 20 minutes. Maybe longer, I guess, more like 30 minutes ago.

CAPCOM Roger, we copy.

SC Apparently in this case, what happened the evaporator drying out instead of the evaporator being frozen.

CAPCOM Roger.

SC I think, the main details about the 2TV-1 test received yesterday could be simulated as to what happened when entered the chamber a couple of times. And there might be something we could bring up that keep preventing in 64 or the next flight.

CAPCOM Roger, concur.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Roger, we would like to confirm that

you have completed the H2 fuel cell purge.

SC That's affirmative, completed at  
approximately 4 minutes past the hour.

CAPCOM Roger, thank you.

PAO Mission Control, Houston. Guam which  
had some slight overlapping with the Mercury at this time  
has loss of signal. Their specific task spelled out in  
the flight plan for the next hour, and we have entered that  
portion of the flight plan where Command Module Pilot Don  
Eisele is due to sleep. At 55 hours, 19 minutes this is  
Mission Control, Houston.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 55:28:00, MC205/1

PAO This is Apollo control at 55 hours 28 minutes into the mission. Apollo 7 coming up on Hawaii now and the tracking ship Huntsville has overlapping coverage here, so this should be a fairly long pass.

CAPCOM Apollo 7, Houston, standing by, Hawaii.  
SC garble.

CAPCOM Apollo 7, Houston, you were real weak,  
say again.

SC Allow 10 clicks H2O LMP; 6 clicks CMP;  
15 clicks CDR and 2 aspirin CDR.

CAPCOM Roger, I copy that.

CAPCOM 7 from Houston.

SC Go ahead.

CAPCOM You might be interested to know that the  
Oilers blanked Boston 16 to 0.

SC Very good, they must have really had  
their picture by now.

CAPCOM They're still in the running.

SC garble.

PAO This is Apollo control, 55 hours 35 minutes, Hawaii has LOS now. This is a quiet time in the flight plan, the control center just plans to monitor these - this pass - this remaining pass through the Huntsville. We'll come up, if there is any conversation on this pass.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 55:41:00 206/1

PAO                    This is Apollo Control, 55 hours, 41 minutes into the mission. Apollo 7 went through the Huntsville pass without any conversation. The CAPCOM you heard pass up the score on the Oiler's game was Captain Allen B. Shepherd, this Country's first man in space who came in a few moments ago and is sitting down on the CAPCOM console with the regular CAPCOM, Ron Evans, and Astronaut John Young is also on that console. We have a little bit more information here on that telescope star count, Ron Evans reports that at the time that Donn Eisele reported seeing about 50 stars Apollo 7 was approximately four minutes into daylight. At the time he reported he could see ten stars he was about ten minutes into daylight. At 55 hours, 42 minutes, this is Mission Control Houston

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 560000

207/1

PAO                      This is Apollo Control at 56 hours into the mission. Apollo 7 started its 36th revolution just a few minutes ago. It is now down over South America. The spacecraft has been out of touch with tracking station since it left the Huntsville area - Huntsville tracking ship area in the Pacific. And we will be out of touch for about another 20 minutes. At that time we will be in range of the Tananarive station. This is Mission Control Houston.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 562100 208/1

PAO This is Apollo Control 56 hours 21 minutes  
and Apollo 7 is coming within range of the Tananarive station  
now. We will stand by and monitor that pass.

CAPCOM Apollo 7, Houston. Tananarive standing  
by.

SC ... Apollo 7, Houston.

CAPCOM Roger.

SC Hey, Ron. Can you give me a readout on  
my (garble)

CAPCOM Not this pass, Walt. We have no dead  
air. We should be able to pick that up Mercury though.

SC (garble)

(Long pause)

PAO This is Apollo Control 56 hours 29 minutes  
and Tananarive has LOS. We went through that pass without  
any conversation. The next station to acquire will be the  
tracking ship Mercury in the western Pacific. At 56 hours  
44 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 MISSION COMMENTARY, 10/13/68, GET: 56:44:20, 209/1

PAO This is Apollo control 56 hours 44 minutes into the mission, Apollo 7 coming within range of the tracking ship Mercury, now. We will stand by through this pass.

CAPCOM Apollo 7, Houston, Mercury.

SC Roger, read you loud and clearly.

CAPCOM Roger, loud and clear. We have data, we can check your 02 manifold pressures.

SC (garble). Okay.

SC (garble).

CAPCOM Houston, say again.

SC (garble).

CAPCOM Roger.

CAPCOM Apollo 7, Houston.

SC Still GO.

CAPCOM Roger, you're GO on chlorinating. Just draw a little bit out, before you chlorinate.

SC Roger.

SC Houston, frames 45 and 46 of magazine 2, were shot one minute ago.

CAPCOM Roger.

CAPCOM Apollo 7, Houston, opposite OMNI.

CAPCOM Apollo 7, Houston, one minute LOS, S band volume up at 57 plus 03.

SC 5703.

PAO Apollo control at 56 hours 52 minutes. Apollo 7 is out of the Mercurys range now. Next station to acquire will be Hawaii at about 57 hours 2 minutes. This is mission control, Houston.

END OF TAPE

PAO Apollo Control at 57 hours 2 minutes and  
Hawaii has acquired Apollo 7.

CAPCOM Apollo 7, Houston Hawaii

SC Roger Houston. ...

CAPCOM Roger same. Seven, Houston. I have  
block data to pass up and also we are standing by for the  
O2 thing that you wanted to do.

SC Okay, ready to go on the block.

CAPCOM Roger. Zero three nine slant three Bravo  
plus two one two plus one three four five zero six one plus  
one seven plus five three four nine zero zero four zero  
dash Alpha Charlie plus zero zero seven minus zero one nine  
nine zero six two plus zero seven plus four zero four three  
six five zero four one dash Alpha Charlie plus one three four  
minus zero two two nine zero six three plus four three plus  
four six four one six eight zero four two dash two Alpha  
plus two two nine minus zero two six four zero six five plus  
one nine plus four three four one two eight zero four three  
dash one Charlie plus two zero six minus zero five four nine  
zero six six plus four seven plus two two four one two nine  
zero four four minus one Alpha plus two five seven minus zero  
six four nine zero six eight plus two zero plus five nine  
four one four four. Over.

SC Roger, we got those. Zero three nine  
slash three Bravo plus two one two plus one three four five  
zero six one one seven five three four nine zero zero zero  
four zero slash Alpha Charlie plus zero zero seven minus  
zero one nine nine zero six two zero seven four zero four  
three six five zero four one Alpha Charlie plus one three  
four minus zero two two nine zero six three four three four  
six... one six eight zero four two ...(Loud noise)

CAPCOM Apollo 7, Houston.

SC Roger. ...where did I leave it?

CAPCOM Roger. Start again with Rev 42.

SC Roger. Zero four two two Alpha plus  
two two nine minus zero two six four zero six five one nine  
four three four one two eight zero four three one Charlie  
plus two zero six minus zero five four nine zero six six  
four seven two two four one two nine zero four four one  
Alpha plus two five seven minus zero six four nine zero six  
eight two zero five nine four one four four.

CAPCOM Apollo 7, Houston. Read back correct.

SC Are you ready to take care of our O2

rig.

CAPCOM Roger, go.

APOLLO 7 COMMENTARY, 10/13/68, GET: 570215 (CDT 7:05P) 210/2

SC Roger. Will you give us a readout now...  
CAPCOM Say again.  
SC Will you give us a readout now and then  
we will switch regs.  
CAPCOM Roger, one zero five.  
SC Roger, one zero five. Okay, do you get  
a readout?  
CAPCOM One zero two.  
SC Roger, UCF's redundant component check  
is go.  
CAPCOM Roger. Apollo 7, better turn S-band  
volume down.  
Huntsville, two wheel on down range.  
CAPCOM Apollo 7, Houston. One minute until LOS  
Tananarive at 58.  
END OF TAPE

PAO                      This is Apollo Control at 57 hours, 13 minutes, and we've had LOS at the Huntsville which had a slight bit of overlapping coverage with Hawaii. Apollo 7 is on the orbits now that sweep down over the Southern Hemisphere, takes it off much of the tracking range. We have a very low elevation pass 1 degree at Tananarive. We may try to raise the spacecraft there, but the flight plan does not call for any further communication till we get to the Mercury, the tracking ship in the West Pacific. The Mercury is due to acquire at 58 hours, 19 minutes, 33 seconds. Flight plan activity scheduled during this long period of silence includes purge, an oxygen purge of the fuel cell. We completed the hydrogen purge an hour or so ago. The crew is also scheduled to chlorinate the portable water during this time and to change the change the lithium hydroxide canister. This block update that you just heard passed up this time is the information the flight crew would need to re-enter on those orbits on which they're out of touch mainly with the range. We passed up that necessary information for the next several revolutions so that in the event of a contingency that would have that information and would be able to re-enter without being in direct touch with the tracking station. At 57 hours, 15 minutes this is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/13/68, GET:580200 (CDT 8:05p) 212/1

PAO This is Apollo Control at 58 hours 2 minutes. Apollo 7 has just completed that very short low-elevation pass at Tananarive. There was a very brief bit of conversation there. We'll play that tape for you now.

SC (Garble)  
CAPCOM Apollo 7 Houston, Tananarive standing  
by.

SC Roger  
CAPCOM Roger, loud and clear.  
SC (Garble)  
CAPCOM Roger. That short pass, 1 minute to  
LOS.

END OF TAPE

APOLLO 7 COMMENTARY, 10/13/68, GET: 581930 (CDT 8:22p) 213/1

PAO                    This is Apollo Control, 58 hours and 19 minutes into the mission. The tracking ship Mercury has acquired Apollo 7, the Mercury is having a problem with their unified S-Band antenna and we will not get any S-Band data, but will stand by for some voice communication.

SC                    Roger

SC                    Houston, Apollo 7

CAPCOM                Houston, go

SC                    Roger, for your flight plan status we've accomplished everything scheduled on the flight plan, we had a little bit of trouble getting all of the pictures, I don't think our camera is working too good.

CAPCOM                Roger, it would be in a hot spot its not working too good.

SC                    We've got it fixed, its ticking along now. We only took two holders on the 0368 on the 16mm, one for the separation and turn around maneuver and one on the final phase of the rendezvous. We are going to be using some of it out the window if it seems appropriate.

CAPCOM                Roger

PAO                    Apollo Control at 58 hours, 26 minutes we have LOS at the Mercury, now. Walt Cunningham reported that the crew did accomplish the flight plan items and that would include the oxygen purge of the fuel cell, the change of the lithium hydroxide cannister and chlorinating the potable water supply. He also reported that they had had a little problem with the camera but it appeared to be clicking along all right now. Next station to acquire will be Hawaii at 58 hours and 37 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/13/68, GET: 583730 (CDT 8:40p) 214/1

PAO This is Apollo Control at 58 hours  
37 minutes, and Apollo 7 is within range of the Hawaii sta-  
tion now.

CAPCOM Apollo 7, Houston, Hawaii.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston.

SC Apollo 7, loud and clear.

CAPCOM Roger. Your number 2 flow proportioning  
valve has been doing a good job this last rev, and we rec-  
commend returning to ECS radiator flow control number 1, by  
switching to number 1 then back to auto.

SC What's wrong with that number 2's job?

CAPCOM Rog. We just prefer to stay on number 1  
as it has a little better

SC You mean it goes to a smaller number,  
or what? Okay, we'll return to 1 for you. We were wonder-  
ing when you would spot that.

CAPCOM Rog. We checked it with Mercury, the  
last time around.

SC We're kinda afflicted today, Ron, bear  
with us.

CAPCOM Roger.

CAPCOM Walt, on the battery charging - we're  
not considering any additional battery charging of A until  
we observe what happens when we charge Battery B.

SC Rog. I understand, but we already  
arranged - to expect Battery B to go up to about 35 or 36  
amp hours too, which shouldn't leave us in very good shape,  
I don't believe.

CAPCOM Rog. I understand your concern. Also,  
Walt we need some command module heater temps when you get  
a chance. They're 5 and 6A through D on your system status.  
No hurry.

SC This is Apollo 7.

CAPCOM Go.

CAPCOM Apollo 7, Houston, go.

SC Rog. In about, oh it must have been a  
little over an hour and half ago, we had another anomaly  
like on the first night when Donn was awake all of a sudden  
the DC plus 1 went to 0 on the readout DC button light  
(Too much static to hear)

CAPCOM Walt, say again after the AC button light  
went through a keyhole.

SC Well, something is taking the inverter  
off of AC button 1 and we're getting (garble) right back on  
again (Too much static to hear).

APOLLO 7 COMMENTARY, 10/13/68, GET: 583730 (CDT 8:40p) 214/2

CAPCOM Roger, it looks like the same thing that happened to Donn, then.

SC I'd say that it is.

PAO This is Apollo Control, 58 hours 43 minutes. We have LOS at Hawaii. We pick up the tracking ship Redstone beginning with this revolution. Acquisition there at 58 hours 52 minutes.

END OF TAPE

PAO This is Apollo Control 58 hours, 52 minutes. We're coming up on the Redstone and we will attempt to get some more information from the crew here concerning the restart on this AC bus.

CAPCOM Apollo 7, Houston switch on.

SC Go ahead.

CAPCOM Apollo 7, Houston, could you confirm that when you had the ACs fail, was it AC bus or an AC overload light?

SC (garbled)

CAPCOM Say again, Walt.

SC (garbled)

CAPCOM You're awful weak, Walt, say again.

CAPCOM Apollo 7, Houston.

SC Houston, Apollo 7, did you read my last communication?

CAPCOM That's negative, say again.

SC Roger, I had AC bus 1 light on, no overload. The inverter was automatically disconnected, and one of the boosters had possibilities with that inverter putting out an over loadage.

CAPCOM Roger, we're working on this. Can you associate this with anything else that was going on at that time.

SC That's negative.

CAPCOM And it wasn't associated then with the slow proportioning valve switch over.

SC Not associated with anything that I can think of.

CAPCOM Roger. You're not going to luck out.

SC This one is going to be a rich one, Ron.

CAPCOM Yeh, I think so.

SC This is one of those things that's never happened. It's a small thing, but it means keeping a watch all the time.

COMM. Yeh, I don't think there's anything you can do about it ron. I'm just reporting that we have had it happen twice.

CAPCOM Okay, we're questioning the range down here to see if they wouldn't come up with something.

COMM. It'll give you something to do during passes anyway.

CAPCOM Apollo 7, Houston, 1 minute LOS, Ascension at 19,

SC Roger.

PAO This is Apollo Control 59 hours into the

APOLLO 7 COMMENTARY, 10/13/68, GET: 585220 (CDT 8:45p) 215/2

mission. Restone has LOS now. As you heard the AC bus 1 light came ON now. A bus is the - an electrical distribution system. Walt Cunningham reported no overload, but he wondered if inverter number 1 might be putting out an over voltage. The power comes out of the fuel cells DC, direct current, and these inverters invert it to alternating current. As you heard, the cognizant flight controllers here have taken these clues they were able from the crew and are now working the problem. That is not considered a real problem at this time, but the - they would like to track down the source of this anomaly if they can. The next station to acquire will be Ascension at 59 hours, 19 minutes. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/13/68, GET: 591900 (CDT 9:20P) MC216/1

PAO This is Apollo control 59 hours 19 minutes into the mission. Apollo 7 is coming up on a fairly low pass, the Ascension station. We will stand by through this pass.

CAPCOM Apollo 7, Houston, Ascension standing by.

CAPCOM Apollo 7, Houston, Ascension standing by.

SC Roger, hear you loud and clear.

CAPCOM Roger, same.

SC Apollo 7 (garble) the United States for our (garble).

CAPCOM Roger, standby.

CAPCOM Apollo 7, Houston, ready to copy.

SC Okay, ready to go.

CAPCOM Roger, rev 38, GET node 59 plus 32 plus 03 longitude 24.7 east right ascension 05 plus 44.

SC Say the longitude again, please.

CAPCOM Longitude 24.7 east.

SC Was that 24.7.

CAPCOM Roger, 24.7.

SC Thank you.

PAO This is Apollo control 59 hours 25 minutes. We've had LOS at Ascension now. The tracking ship Mercury in the western Pacific will acquire at 59 hours 55 minutes - at 59 hours 25 minutes. This is mission control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/13/68, GET: 595430 (CDT 10:00p) 217/1

PAO This is Apollo Control 59 hours 54 minutes into the mission. Apollo 7 in its 38th revolution around the earth coming up on the tracking ship Mercury in the Western Pacific now. Guam has overlapping coverage.

SC (Too much static to hear)

PAO This is Apollo Control. The tracking ship Mercury now reports having a problem with its COMSAT antenna. The antenna it utilizes to - connection with communication satellite. That leaves the ship with high-frequency capability only. We will probably wait until we get within Guam acquisition before putting in a call to the spacecraft. We'll continue to monitor through the rest of the Mercury pass.

CAPCOM Apollo 7, Houston, Guam standing by.

CAPCOM Apollo 7, Houston, 1 minute LOS Redstone at 26.

SC Roger, We'd like to give the results of the rendezvous radar test and confer on the use of the rendezvous radar power. Would you pass that up to us Ron?

CAPCOM Say, again, Walt.

SC We have to know the position of the Rendezvous radar heater power switch and results of the rendezvous self-test. We don't have that onboard.

CAPCOM Roger. Awful hard to understand. Something about a power switch, and I'll guess which one. I'll find out.

SC Rendezvous radar, power switch and the preposition switch and the other end of it.

END OF TAPE

APOLLO 7 COMMENTARY, 10/13/68, GET: 601730 (CDT 10:11p)218/1

SC Power switch, and its a prepositioned  
switch, the other end of it (garbled)

CAPCOM Roger

PAO This is Apollo Control, 60 hours, 6  
minutes, Guam has LOS now. Apollo 7 will be within range  
of the tracking ship Redstone at 60 hours, 26 minutes.  
This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/13/68, GET: 60:26:10 (CDT 10:30p) 219/1

PAO This is Apollo Control, 60 hours, 26 minutes into the mission. Apollo 7 coming up on the tracking ship Redstone now. We'll monitor this pass.

CAPCOM Apollo 7, Houston through Redstone.

- Apollo 7, Houston Redstone.

SC Roger, read you loudly.

CAPCOM Roger, a little weak but clear.

SC Roger, did you get the data on the radar transponder switch.

CAPCOM Affirmative, are you ready to copy?

SC Go ahead.

CAPCOM Roger, the radar transponder power switch, you put it to the heater for 1 minute and then to power for the self-fell test. By the way, you leave 24 minutes in heater if you are going to really operate it. Systems pass left hand, then transponder right hand to Alpha. Indicator should be 1 to 5 volts. Systems pass right hand to Bravo. Indicator 2 plus or minus 1 volt. Systems pass right hand to Charlie. Disregard the indicator. Systems pass right hand to Dog. Indicator should be zero to 4.5 volts. Over.

SC I'm getting a very broken. We'll have to wait for Ascension, I think, to get a good separator.

CAPCOM Roger.

SC Do you read, Apollo 7.

CAPCOM Apollo 7, Houston. Roger, read you now.

SC Roger. You might try it again. You were (garbled) I couldn't read you at all.

CAPCOM Roger. Radar transponder power switch goes to heater for 1 minute then to power.

CAPCOM Apollo 7, Houston. Is the COMM any better now?

SC Roger. All's clear, you want to try to read that off again.

CAPCOM Roger. The radar transponder switch goes to heater for 1 minute, then to power. Systems pass left hand to transponder. Right hand to Alpha. Your indicator 1 to 5 volts. 7, Houston, you copy so far.

SC Let's try to pick you up at Ascension.

CAPCOM Roger, we'll try Ascension then.

SC Roger.

CAPCOM Apollo 7, Houston, 1 minute to LOS. Ascension at 52.

PAO This is Apollo Control at 60 hours, 35 minutes. Apollo 7 beyond range of the Redstone now.

APOLLO 7 COMMENTARY, 10/13/68, GET: 602610 (CDT 10:30p) 219/2

That information that the Cap Com Ron Evans was attempting to pass up is the procedure for onboard testing of the radar transponder which will be used in connection of the Lunar Module radar tomorrow. The LM radar itself is at the White Sands, New Mexico test facility. It will attempt to lock on to the transponder onboard the Command Module as the Command Module comes over the White Sands area. Next station to acquire will be Ascension. At 60 hours, 52 minutes this is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/13/68, GET: 605220 (CDT 10:55p) MC220/1

PAO This is Apollo control at 60 hours  
52 minutes into the mission. Apollo 7 coming up on the  
Ascension Island tracking station, now. We'll listen  
through this pass.

CAPCOM Apollo 7, Houston.  
SC garble.

CAPCOM Roger, I can continue with that trans-  
ponder check now if you want.

SC Go ahead, I have the data for you, if  
you're ready to copy.

CAPCOM Roger, ready.  
SC garble. Alpha 3.2, Bravo 1.8,  
Charlie 0.44, Delta 0.

CAPCOM Roger, I'll read back, 3.2, 1.8, 0.44,  
and 0.

SC That is correct. Delta V to tab over  
the point one at the most.

CAPCOM Roger.  
CAPCOM Apollo 7, Houston, be advised of warm  
up time for the real test on that thing is 24 minutes.

SC Roger, and we'll be using it for one  
minute, right?

CAPCOM Say, again.  
SC garble.

SC Apollo 7, Roger. Houston, Apollo 7.  
CAPCOM Houston, go.

SC Before we prove that point on the  
query they taste horrible right now.

SC It's two and a half hours after  
injection.

CAPCOM Roger, we understand.  
SC We've been asking it now for a long  
time and now we will just have to wait or consider using  
the survival kit water if it's necessary.

CAPCOM Roger.  
CAPCOM Apollo 7, Houston.  
SC garble.

CAPCOM Roger, we see no, biomed down link on  
the LMP.

SC I wanted to fly, now I got to go get  
it up.

CAPCOM Say it again, Wally.  
SC Roger, we've got the cable all hooked  
up.

CAPCOM Roger.  
SC We got down to keeping one man on watch  
at a time and that's going to help a lot. But we still need  
(Garble)

APOLLO 7 COMMENTARY, 10/13/68, GET: 606220 (CDT 10:55p) 220/2

SC (Garble)  
CAPCOM Say it again  
SC (Garble) How are you reading my heart?  
CAPCOM Stand by.  
SC Is my heart coming in five by five?  
CAPCOM Roger, Walt we have it now, thank you.  
CAPCOM Apollo 7, Houston. 30 seconds LOS

Mercury at 28.

PAO This is Apollo Control, 61 hours 1 minute. Ascension Island has LOS now. Here in the Control Center we are getting ready to hand over to the next shift of flight controllers. The next station to acquire Apollo 7 will be the tracking ship Mercury. At 61 hours 28 minutes This is Mission Control, Houston.

END OF TAPE

APOLLO 7 Commentary, 10/13/68, GET: 612030 (CDT 11:24p) 221/1

PAO                      This is Apollo Control. There will  
be a change of shift press conference here in Houston in  
approximately 15 minutes. That would be 20 minutes to the  
hour. This is Apollo Control.

END OF TAPE.

PAO This is Apollo Control, 61 hours, 28 minutes into the mission of Apollo 7. We are coming upon acquisition with the Mercury tracking ship within a few seconds. Let's standby for that conversation.

CAPCOM Apollo 7, Houston, acquisition Mercury.

SC This is Apollo 7.

CAPCOM Apollo 7, Houston, GO.

SC Roger. We have a - have a (garble)

CAPCOM Apollo 7, Houston. I will call you again in about 30 seconds. The signal is very poor. All I could copy is something about caution and warning panel. Apollo 7, Houston. You are unreadable right now.

SC This is Apollo 7, say again.

PAO This is - this is Apollo Control, 61 hours, 32 minutes. Communications have not been as desirable as could be wished for on this pass. We are still standing by live. It is possible since this pass runs into the Guam station, that will be the point where we will get better communications. Let's standby.

CAPCOM Apollo 7, Houston. How do you read?

SC (garble)

CAPCOM Apollo 7, Houston. I read you about strength 1 and virtually unreadable.

SC Roger. Are you ready to go?

CAPCOM Roger. That is much better, GO.

SC Apollo 7, say again.

CAPCOM Apollo 7, Houston. At acquisition Mercury, you gave me a transmission. All I copied was something about caution and warning panel. Would you say again?

SC Houston, this is Apollo 7. Just prior to crossing the Red Sea, we lost AC + 1 and AC + 2. (garble)

CAPCOM Apollo 7, Houston. Understand just after crossing the Red Sea, you lost AC +1 and AC + 2. You have AC reset. I am going to wait over Guam and go over this again. I am missing too much of the transmission.

SC Roger. We have to stand GO.

CAPCOM Apollo 7, Houston. How do you read?

SC Roger, loud and clear.

CAPCOM Okay, I am sorry to ask this. Would you repeat this again. But I did not get the full message there. I got something after passing the Red Sea, you had AC + 1 and AC + 2 failed. You did get reset on both buses. Is that correct?

SC That is correct, approximately 61 hours and 14 minutes. While we were there, we had a master alarm but no caution and warning light indicated.

CAP You had no caution and warning lights.

SC That is very true here. After you called we had a better ghost earlier in the mission. The AC wasn't really necessarily lost as the BUS went twice indicated back up again. We got a...and that is a manned condition or not.

CAPCOM Roger, understand you think it is a ghost. Now - you can make sure I have it correct. You do have both ac buses working normally now.

SC That is correct. I am not sure kind what kind of ghosts we have, but we have had master alarms and no indication as to the cause.

CAPCOM Thank you.

SC Hey, Bill. We got one more thing that may or may not be significant. But after I reset the master alarm with no caution to warning light but took the currents and all the fuel cells. And we were averaging well over 20 amps of fuel cells and now we are back to about 15. And at first I attributed that to a cycling load. I don't know. It could have possibly been 98 loads. I don't know.

CAPCOM Roger, understand. Immediately after reset, you monitored the fuel cell currents at 2.0 amps and they are now reading 15.0.

SC That is a negative. After the - master alarm, there was no caution to warning lights. At 6109 is when I noticed the fuel cell clearance. The other two caution and warning lights when the bus failed were at 6114, over.

CAPCOM Roger.

SC This is (garble)

CAPCOM Right. Apollo 7, Houston. We are getting a tape dump here at Guam and we will be taking a look at it and will be trying to give you a call at Redstone on this.

CAPCOM Okay, there is not much we can do right now but I would like to read out what we have left and continue with it.

CAPCOM Right. All I know is that there is a lot of cold cathode according to the...

CAPCOM Understand. Apollo 7, Houston, 1 minute until LOS, Guam, Redstone, at 01.

SC Redstone?

CAPCOM And Apollo 7, Houston, I would like to confirm my cannister change around the 58 hour point.

SC That is good.

CAPCOM Thank you.

END OF TAPE

PAO This is Apollo Control 62 hours 36 minutes into the mission of Apollo 7. We have tapes of our pass over the Redstone tracking ship and we just finished a pass over Ascention Island. We'll play those tapes now.

CAP COM Apollo 7, Houston.

SC Roger, Houston. Go ahead.

CAP COM Roger. I was a bit optimistic. It'll take a little longer to look at those tapes, but we did get a dump over Guam and we'll be giving you our analysis of the situation as soon as we get it. Meantime, I'd like to go back over my notes and make sure that I have the story correct. Okay, the way I have it. At 61 + 09 you got a master alarm light with no caution and warning light? You read that master alarm okay.

SC You better release ...

CAP COM At that time, fuel cell current was averaging 20.0 each. At 61 + 14, you got an AC1 and an AC2 fail. Do you read that, both AC1 and AC2 successfully. At the time that you were talking to me, about 61 + 30, the fuel cells were averaging 15 amps, one five amps. That is the story as I have it copied. Apollo 7, Houston. Did you read?

SC Houston, Apollo 7. You read?

CAP COM Roger. Apollo 7, Houston. How do you read me?

SC Read you fine now. How me?

CAP COM I read you about 4 by 4. Did you get my transmission there?

SC ... correct. The time was 61 + 05 for the master alarm and 61 + 14 for the buss fail.

CAP COM Apollo 7, Houston. Copied the correction, 61 + 05 for the master alarm.

SC And the fuel cell loading may or may not be significant. That was the third AC buss one fail we've had and the first AC buss two failure and my ... onboard analysis track it down to a ... overvoltage but guiding onto both busses which seems kind of difficult.

CAP COM Roger.

SC Did you read? Houston, Apollo 7. Did you read.

CAP COM Roger. Go.

SC Did you read my last transcription, Bill.

CAP COM Roger. Understand, you have - this is the third AC1 failure but the first AC2 failure you've experienced. Ah, you are doubtful, you are in question as to how a transit overvoltage can throw both AC's off line, is that your question?

APOLLO 7 COMMENTARY, 10/14/68, GET: 623600 (CDT 12:39a) 223/2

SC That's affirmative.  
CAP COM We're looking at it. We will be looking at that and trying to give you a complete story as soon as we can put it together.  
SC Okay. And confirm we have a good tape running now.  
CAP COM Stand by. Apollo 7, Houston. We are rewinding the tape now. The tape will be yours at LOS.  
SC Roger. Thank you.  
CAP COM LOS in about 3-1/2 minutes. Apollo 7, Houston. Coming up on LOS Redstone. Ascension at 27.  
SC Roger. We'll be standing by.  
CAP COM And the tape recorder is yours now.  
SC ...  
Houston, this is Wally. Houston, this is Wally.  
CAP COM Go.  
SC Roger. You might just check into our configuration. There was a last bit of variance on inverter safety wiring.  
CAP COM Roger. Check into the inverter safety wiring.  
SC There's a new change in the ... that they had in the plan.  
CAP COM Roger.  
SC I think Wally's referring to the change where they disconnected the overload transit.  
CAP COM Apollo 7, Houston. Apollo 7, Houston.  
SC Roger Houston, Apollo 7. Go.  
CAP COM AOS Ascension and we're still studying the problem.  
SC Okay. ... not here right now, everything normal.  
CAP COM Roger. We just finished the playback and are still looking at it.  
SC Good show. Old Wally is sacking out so I'll be minding the store in the meantime.  
CAP COM Okay, Donn. Apollo 7, Houston. One minute LOS Ascension, Mercury at 04.  
PAO This is Apollo Control, 62 hours 42 minutes into the mission. As you heard, we're anticipating contact with tracking ship Mercury at 63:04. The tape was self explanatory and the master alarm light coming on and the procedures that were gone through, the reset was successful. The AC buss one and two fail, ah, of course the AC buss being distribution points for the alternating current to go to the various spacecraft circuitry. As of now, as you heard on the Ascension pass, Bill Pogue, here in the Control Center talked

APOLLO 7 COMMENTARY, 10/14/68, GET: 623600 (CDT 12:39a) 223/3

PAO to the spacecraft. Everything appears normal, the current for the fuel cells at present is normal on the last readouts. Last word, the spacecraft Commander Wally Schirra and the LM Pilot Walt Cunningham were sacking out. At 62 hours 43 minutes this is Apollo Control.

END OF TAPE

PAO This is Mission Control 63 hours 04 minutes into Apollo 7. We're coming up on the Mercury tracking ship for a pass. Let's join the conversation.

GODDARD VOICE Houston, Goddard Voice Conference.

COMM Go ahead, Goddard.

GODDARD VOICE How do you read?

COMM You're loud and clear.

GODDARD VOICE Stand by, I'll put you back to conference.

COMM Thank you.

GODDARD VOICE Mercury network, GOSS conference.

Mercury network, GOSS conference.

MER Mercury.

GODDARD VOICE Mercury network, how do you read?

MER Read you loud and clear.

GODDARD VOICE Hear you the same.

CAP COM Apollo 7, Houston.

SC Roger, Houston, Apollo 7.

CAP COM Roger. Acquisition Guam.

SC Roger.

CAP COM Apollo 7, Houston. About one minute 30 seconds to LOS Guam. Redstone at 36 and we'd like to confirm biomed switch center.

SC Roger. Stand by. (garbled)

CAP COM Roger. Understand (garbled)

PAO This is Apollo Control, 63 hours

16 minutes into the flight of Apollo 7. Our next acquisition point will be the Redstone tracking ship at 63:36. Like to give a little recap on a situation we had concerning the AC busses. At 62 hours and one minute into the flight, Astronaut Pogue in the Control Center requested Apollo 7 concerning a message that was hardly readable which had been received at 61:27 from Astronaut Schirra, spacecraft commander, concerning the caution and warning panel. Then at 62:01 as I say, Astronaut Pogue indicated that we had had a dump over Guam of data, we were analyzing it and again went through what had happened onboard. In the period of the 39th revolution at 61 hours and 05 minutes, the master alarm light had come on. There had been no caution and warning light previous to that. It was also indicated then that the master alarm was okay after reset. After that, at 61 hours 14 minutes the AC buss one and AC buss two failed. They were reset successfully at 61 hours 30 minutes the fuel cells were averaging 15 amperes. Before that time, they were averaging 20 amperes of flow. It was indicated by the spacecraft that this was the third AC buss one fail during the flight and the first AC buss two fail during the flight. The question from onboard came could it be transient overvoltage, that if it were why would

PAO                    it fail both busses. It was also indicated that from the 20 down to the 15 amp level in output could possibly be due to the power down of the spacecraft or cyclic loads. Astronaut Schirra then indicated in this pass that back at the Control Center that we should check the configuration, the inverter safety wiring. At that time, Astronaut Cunningham indicated that Schirra had reference to changes concerning overload sensors that they had gone over previously. Over Ascension at 62:27 in the 40th revolution, Cap Com Astronaut Bill Pogue, talked to the spacecraft at that time Commander Schirra indicated everything was normal, Pogue indicated that they had finished the playback and that it was under study concerning the AC buss one and two problem and at 62 hours 30 minutes Apollo 7 indicated that the command pilot Schirra and the LM Pilot Cunningham were now sacking out, which indicates that everything at that time, to them, appeared to be normal. After this pass, which was a very uneventful pass, we also assume that everything is normal onboard the spacecraft. At this time, from the Guam pass, we did not get any bio-medical readouts again. That's a recurring situation, we're tracking that down. Until right toward the end of the pass, about the last 20 seconds of the pass. At 63 hours 20 minutes into the mission, this is Apollo Control

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 633500 (CDT 1:39) 225/1

PAO This is Apollo Control, 63 hours,  
36 minutes into the mission of Apollo 7. We are currently  
on a nightside pass. Approaching South America, we are  
coming within range of the Redstone Tracking Ship. We will  
standby for any possible conversation.

CAPCOM Apollo 7, Houston, acquisition Redstone.  
Apollo 7, Houston.

SC Go ahead, Houston, Apollo 7. You're  
very weak, GO.

CAPCOM Roger, We detected a CMC power uphold  
over Guam. Was that a valid reading?

SC Yeau, that is correct. I powered it  
up and went state detector integrate and put it back down.

CAPCOM Okay, thank you. Apollo 7, Houston.  
One minute until LOS, Redstone, Canary 07.

SC Roger.

PAO This is Apollo Control, 63 hours,  
44 minutes into the mission of Apollo 7. We are winding  
up our fortieth revolution about to enter on our forty  
first revolution, go over South America and come up on the  
Canary Islands acquisition point at 07 that is 40 - correc-  
tion - 6407. At this point, spacecraft commander and the  
LM pilot, Schirra and Cunningham have been some asleep  
for some hour, 1 hour and 15 minutes. Everything appears  
operating satisfactorily in the spacecraft. At 6345 this  
is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 64 hours  
07 minutes into the mission of Apollo 7. We are approach-  
ing Canary Islands. Canary just had acquisition, let's  
join the conversation.

SC Roger Houston.

CAP COM Roger. ... we have about a 6-1/2 min-  
ute pass here and then it's going to be about one hour  
before we pick you up and that'll be over the Redstone.

PAO This is Apollo Control 64 hours  
13 minutes into the mission of Apollo 7. Things continue  
quiet. The spacecraft has just lost acquisition with the  
Canary Islands. The next point of acquisition for communi-  
cation will be at 65 hours and 10 minutes with the Redstone  
tracking ship. We have nothing coming up in the flight  
plan until some 65 hours and 40 minutes where we have at  
this time a planned Control Center flight plan update which  
would be passed to the crew of the spacecraft. So, with a  
long dry spell coming up, this is Apollo Control, 64 hours  
14 minutes into the mission of Apollo 7.

PAO This is Apollo Control 65 hours 10 minutes into the mission of Apollo 7. We are coming up into acquisition with the Redstone tracking ship in a very few seconds. The last communication we had was some - almost an hour ago. We'll stand by and see what transpires in this pass.

CAP COM Apollo 7, Houston. Apollo 7, Houston. Apollo 7, Houston.

SC Roger Houston, Apollo 7.

CAP COM Apollo 7, Houston. How do you read me? Apollo 7, Houston, how do you read? Apollo 7, Houston how do you read? Apollo 7, Houston. Switch omni please. Apollo 7, Houston, how do you read?

SC ... .. Bill.

CAP COM Okay, good. I waited for confirmation because I'm going to read off a fairly lengthy figure. We have a procedure developed here to assist in locating the AC buss problem.

SC Okay, fine. Stand by and I'll get something to write it down on. Go ahead with your procedure.

CAP COM Okay, you can probably do it as I call it out. First, switch AC buss with power in the following cabin fan.

SC Roger. Cabin fans are OFF.

CAP COM Roger. Cabin fans are OFF. Next glycol pump.

SC Stand by. Glycol pump on AC1.

CAP COM Roger. Glycol pump on AC1. Next suit compressors.

SC Suit compressors on AC1.

CAP COM Roger. AC1. Do not change configuration.

SC Roger.

CAP COM Okay. Number two. We would like for you to check the six cryo fan circuit breakers on panel 226 and report if any are popped but do not push them in.

SC Stand by. Roger all the cryo breakers are in.

CAP COM Roger. Understand all of them are IN. Thank you very much. Opposite omni please?

SC Stand by.

CAP COM Apollo 7, Houston. We would like you to switch omni for maximum signal strength. We'd like to get some TM before we have LOS here at Redstone which is going to occur in about 45 seconds.

PAO This is Apollo Control 65 hours 20 minutes into the Apollo 7. During this pass at the Redstone

PAO tracking ship we passed up information to Donn Eisele trying to isolate the AC, the alternating current, buss problem that occurred before. We heard procedures where our Astronaut Pogue here in the Control Center was asking if the cabin fans were OFF, Eisele said yes, glycol pump and Eisele indicated it was on the AC1 buss or distributing point for the AC power, suit compressors also Eisele said were on AC1 buss. He was then instructed not to change the configuration, leave it the way it was. Pogue then indicated that he would like to know if the six cryo fan circuit breakers could be checked and if any were popped, that is out, of the circuit. The reply from Eisele was "No, they were all in" and that ended the pass except for Pogue to request him to switch the omni antennas so we could get a maximum signal strength. The next pass we will have will be at Antigua, which will be coming up at 30 minutes, ah, 65 hours 30 minutes, 9 minutes from now. At 65:21 this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 653000 (CDT 3:33) 228/1

PAO This is Apollo Control, 65 hours,  
30 minutes into the mission of Apollo 7. We are coming up  
in a few seconds in a pass over Antigua. Let's standby  
for conversation of that flight.

CAPCOM Apollo 7, Houston, acquisition Antigua.  
Apollo 7, Houston, acquisition Antigua.

SC Roger, Bill, loud and clear.

CAPCOM Roger. Apollo 7, Houston, 1 minute  
until LOS, Antigua, acquisition Canary at 40. I will have  
a flight plan update at that time.

SC Roger, Bill. See you in about 4 minutes,  
okay?

CAPCOM Roger. Four or 5 minutes, that is cor-  
rect.

SC Okay.

PAO This is Apollo Control, 65 hours,  
36 minutes into the mission of Apollo 7. In almost 4 minutes,  
we will have acquisition at the Canary Islands at 40. A  
little over - or less than 4 minutes from now, we'll come  
up then to see what will be passed up concerning this  
ac bus problem. At 6536, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 65 hours, 40 minutes into the mission of Apollo 7. We are coming upon acquisition in about 30 seconds with Canary Islands. Spacecraft commander, Schirra and LM pilot, Cunningham, are still in their sleep period. We are starting in on the forty second revolution, and I feel there will be some conversation over Canary Island. Let's listen in.

CAPCOM Apollo 7, Houston.  
 SC Houston, Apollo 7.  
 CAPCOM Roger. I have the flight plan update.  
 SC Let's have the update, Bill.  
 CAPCOM Roger. At 66 + 15, delete the radar transponder self test.  
 SC Roger, understand. Delete the pass at 66 + 15.  
 CAPCOM Roger. At 6900, add unstow and set up TV camera.  
 SC Roger, understand, get out the TV.  
 CAPCOM Roger. At 69 + 50, delete the reference to H2 heaters on.  
 SC Roger. No heaters on, understand.  
 CAPCOM Roger. At 70 hours, 70 + 00, add fuel cell 02 purge.  
 SC Roger. Fuel cell 02 purge at 70 hours.  
 CAPCOM Roger. And that is 71 + 41, TV on.  
 SC Roger. You want the TV on at the same time when we plan to run the radar test, is that correct?  
 CAPCOM No, I think the - rendezvous radar test is - standby 1. You're right. Wait just a minute. Let me get this set up.  
 SC Okay.  
 CAPCOM Meantime, would you switch on me, please?  
 SC Roger.  
 CAPCOM Apollo 7, Houston. Would you confirm opposite on me? We are having a little trouble on TM.  
 SC Roger. I can see the area outside BRAVO.  
 CAPCOM Roger. And that is the correct time for TV on.  
 SC Roger. TB on at 71 + 41. Is that right?  
 CAPCOM Affirmative. That is the end of the flight plan update.  
 SC Roger. If you don't want the TV on until Sunday, 1 hour and 40 minutes, I think we will hold off in unstowing it. The thing is in the way when it is up, and I would rather not be running into it all the time.  
 CAPCOM I didn't hear it.

SC Understand you want the TV running at  
the same time - or will be doing the radar test.  
CAPCOM That's affirmative. That's the confir-  
mation I get here.

SC All right.  
CAPCOM Apollo 7, Houston, opposite omni  
please.

SC Roger.  
CAPCOM And Apollo says to Houston for your  
information, I am pretty sure this TV on time is tied into  
the Texas acquisition time.

SC Yeau, that figures.  
CAPCOM Apollo 7, Houston. Would you confirm  
the report the position on your PMP power switch?

SC Standby. PMP is a normal spot.  
CAPCOM Normal. Would you go to OFF, please?  
SC Roger.

CAPCOM Apollo 7, Houston, 1 minute LOS, Canary,  
Carnarvon at 18.

SC Roger.  
PAO This is Apollo Control, 65 hours,  
50 minutes into the mission of Apollo 7. In this last  
pass over Canary Islands, we had a flight plan update  
that consisted of deleting the radar - tests at 6 hours,  
15 minutes. At 69 hours, adding an unstow and setting up  
of the TV camera onboard the spacecraft. At 69 hours,  
50 minutes, they have deleted the reference to the H2 heat-  
ers on. At 70 hours, they added fuel cell oxygen purge.  
And the big one at 7141 into the mission - the schedule  
for the TV ON. The signal would be received at Corpus  
Christi, Texas. It would go through the conversion process,  
and then be released. Eisele asked at that point - indicat-  
ed that it seemed to him that it was the same time as the  
rendezvous radar tests. CAPCOM indicated "Yes, you're  
right, and to standby." And then he came back and said,  
"That is the correct time, 71 hours, 41 minutes into the  
mission." Eisele indicated that they would like to hold  
off in unstowing the TV, if possible because it is in the way  
when they are moving around inside the spacecraft. CAPCOM  
Pogue at that point, indicated that as long as the time of  
71 hours, 41 minutes into the mission was met for TV ON,  
they could do as they wished. It was also indicated that  
the time for TV ON, coincides with the Texas acquisition  
coming over the United States. At 65 hours, 52 minutes  
into the mission of Apollo 7, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control 66 hours 18 minutes into the mission of Apollo 7. We're coming up now over Carnarvon, Australia. We should have acquisition in some 25 seconds from now. On our 42nd revolution, let's stand by for conversation.

CAP COM Apollo 7, Houston. Apollo 7, Houston.

SC Roger, Houston, Apollo 7, Go.

CAP COM Roger. Acquisition Carnarvon and I'd like for you to check a couple of things for us please. S-band normal mode PCM switch to PCM and the power amplifier barber pole.

SC Roger. Power amp in barber pole and the PCM switch is in PCM.

CAP COM Thank you. Apollo 7, Houston. One minute LOS Carnarvon. Request S-band volume up for Honey-suckle at 25.

SC Roger.

CAP COM Apollo 7, Houston. Acquisition Honey-suckle.

PAO This is Apollo Control 66 hours 32 minutes into the mission. We had very little contact on that pass. We're coming up on Redstone tracking ship at 66:45. At 66:32 into the mission, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 66 hours  
46 minutes into the mission of Apollo 7. We're coming up  
on acquisition with Redstone, let's listen in.

SC Roger Houston.

CAP COM Apollo 7, Houston.

SC 7 Go.

CAP COM Roger. Have you made any change in  
the Comm system, particularly TM settings?

SC Yeah, I took the recorder for about  
30 seconds (garbled) haven't monkeyed with the TM setting.

CAP COM Okay.

SC Do you have that ... tape.

CAP COM Have we got what?

SC Roger. I put the tape in ... for  
30 seconds to record something and then left it off so it  
wouldn't ... run.

CAP COM No, I don't think that'll do any  
harm.

SC Are you receiving things on tape  
dump.

CAP COM Did you go to up telemetry command  
reset? Apollo 7, Houston. Did you go to up telemetry  
command reset? Apollo 7, Houston. Apollo 7, Houston if  
you read go to S-band OFF to tape. Apollo 7, Houston.  
About 30 seconds to LOS, Antigua at 03.

PAO This is Apollo Control 66 hours  
54 minutes into the mission. We had an exchange there  
between Cap Com and the spacecraft concerning telemetry.  
There's no big problem but in this particular pass we did  
not receive satisfactory telemetry from the spacecraft.  
Will no doubt contact them in the next station which will  
be Antigua at 67:03 into the mission. At 66:54 this is  
Apollo Control.

END OF TAPE

PAO This is Apollo Control, 67 hours, 3 minutes into the mission of Apollo 7. We are now coming up in a few seconds with acquisition with Antigua. We will be starting in the forty third revolution of the flight of Apollo 7. Let's listen in.

CAPCOM Apollo 7, Houston.

SC This is 7.

CAPCOM Roger, acquisition, Antigua.

SC Roger.

CAPCOM I would like to get a confirmation on something. Did you go to command reset when you use the tape?

SC That's affirmative.

CAPCOM Roger. Ground advisors do not use DSE as voice log. We have lost TM subcarrier. And we can't get data while you are dumping. We're working on it; we're trying to fix it.

SC Roger, say again.

CAPCOM We're working a - lost TM subcarrier problem.

SC Roger.

CAPCOM Also we would like S-band off to tape.

SC Roger, it's to take.

CAPCOM Thank you. Apollo 7, Houston.

SC Apollo 7.

CAPCOM Roger. Apollo 7, Houston. We would like for you to stay in the present comm configuraton until further advice. We are having some difficulties on that TM.

SC Roger, understand.

PAO This is Apollo Control, 67 hours, 13 minutes into the mission of Apollo 7. We have lost acquisition. Antigua will come up the Canary Islands in just about 2 minutes from now. We still have some - some telemetry problem. And they are figuring out what to do about it at this time. So we will just standby for the next pass at Canary Islands which should be in a minute or half or so.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 671400 (CDT 5:17) 233/1

CAP COM Apollo 7, Houston. Acquisition Canary.  
SC Roger, Houston.  
CAP COM We'll be at Carnarvon about 50, I will  
have a state vector for you then.  
SC Roger. Understand.  
CAP COM Apollo 7, Houston. Opposite omni.  
SC Roger. Stand by.  
CAP COM Apollo 7, Houston. One minute LOS  
Canaries. Carnarvon at 50. Would like POO at Carnarvon  
acquisition.  
SC Roger, will have it.  
CAP COM Thank you.  
PAO This is Apollo Control 67 hours 23 min-  
utes into Apollo 7. We are looking for the spacecraft over  
Carnarvon at 67 hours and 50 minutes. At that time, the  
last communication from Cap Com Pogue to Astronaut Eisele  
in the spacecraft was they wanted POO at Carnarvon which  
means the platform of the inertial measuring unit on board  
the spacecraft, part of the guidance system, to be in idle-  
ing position at Carnarvon. At 67 hours 23 minutes and going  
into our 43rd revolution around the earth with Apollo 7,  
this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 67 hours, 50 minutes into the mission of Apollo 7. We're coming up now on Carnarvon, and within about 25 seconds we should have acquisition. Let's standby for the conversation.

CAPCOM Apollo 7, Houston.

SC Go ahead, Houston.

CAPCOM Roger, confirm to and accept.

SC Roger, I'm am too. I'm here to accept.

I would like for you to take a look at this program alarmed 1105 that we have been getting off and on to the play. I got to begin you about 5 minutes ago.

CAPCOM Roger, standby. 46.

SC I do accept now.

CAPCOM Roger. Have a main check to go with the CSM now that it is coming up, if you can get ready to copy that. And I also have an update for the rendezvous radar tests.

SC Roger. Go ahead, it's your month check.

CAPCOM Roger, month check. 071110000 minus 2 niner 14 + 14170, 15 niner 3.

SC Roger. 071110000 minus 2 niner 14 + 14170, 15 niner 3.

CAPCOM Readback is correct. When you are ready I can give you the rendezvous radar test update.

SC Go ahead with that update.

CAPCOM Roger. Starting with the aline. 70 + 58, 15 niner degrees, 055017, 71 + 3 niner, 71 + 43.

SC Roger, understand. 70 + 58, 15 niner, 055017, 71 + 3 niner, 71 + 43.

CAPCOM Readback is correct. Don, I have a analysis to this ac problem. I'll go over it and see what your comments are.

SC Okay, go ahead.

CAPCOM Okay, point 1, we have spent considerable time going through the data here. And we have noticed that the ac bus gliches are associated with the cycling off of O2 cryo fans. This has caused the ac bus to surge to over voltage. It seems as though this is only a problem at low power loads on the ac bus, but it has been noticed repeatedly.

SC Okay, that - sounds pretty logical.

CAPCOM Point 2, recommendation O2 fans, tank 1, off, do that. This will insure ac 1 stays on line. If our analysis of the problem is correct.

SC Roger, what about ac 2, we have that one also.

CAPCOM Roger, You have that one on. We will periodically switch O2 fans, tank 1 back to the on position. At the same time, O2 fans, tank 2 off. This will insure at

CAPCOM least 1 ac bus is protected at all times from this - 30 to over voltage.

SC Roger, I see. If we get fired up again, do you think we will still have this problem?

CAPCOM I'm not sure. It seems as though it is not nearly as much a problem when you're powered up, it is only when you're in a low power condition. The voltage control is more sensitive or tends to overshoot or something there.

SC Okay, I'll turn tank 1 off for now.

CAPCOM Right, understand.

SC When are they going to get some (garble) navigation tests?

CAPCOM Roger; we have taken that into consideration.

SC Okay.

CAPCOM Apollo 7, Houston; opposite OMNI.

SC Roger.

CAPCOM Apollo 7, Houston. We are having a little trouble getting the CSN nav up; if we don't do it, I'll read it up to you over HSK; that'll be about 67 plus 59 and will require S band volume up.

SC Roger.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Roger; I'm going to have to read you the B27 update if you have the pad out there. Apollo 7, Houston; do you read?

CAPCOM Apollo 7, Houston. Apollo 7, Houston. We will not have to give you a B27 update where we were going to uplink it. Apollo 7, Houston; do you read? Apollo 7, Houston.

END OF TAPE

PAO This is Apollo Control 68 hours 8 minutes into the mission of Apollo 7. During this pass we heard Astronaut Pogue, our Cap Com here at MCC, update the command module computer on the program P-27 it's called. He updated for the rendezvous radar test and also indicated that the AC buss problem we had reached a tentative conclusion here in the Control Center and that was that the glitch is associated with the cycle of the OFF position of both of the O2 cryogenic fans, that's the cryogenic oxygen fans, causes surging of the AC alternating current busses or distribution points to overvoltage conditions. That's a problem, it seems, at low loads on the AC busses. The proposed solution was indicated to be that the O2 fans for tank number two should be ON, the O2 fans for tank number one should be OFF. If the above solution works out, if its correct, then the AC one buss would stay on the line. Periodically they propose to switch the O2 fans in tank number one to ON and the O2 fans on tank number two to OFF at that time thereby keeping one ON and one OFF at all times to test out this solution. In that way, one AC buss would be protected at all times from that overvoltage condition. This was acknowledged by Don Eisele in the spacecraft and this is the solution that they are now testing out. We anticipate a pass over the United States, will be in acquisition Texas at 68 hours 34 minutes. At 68 hours 10 minutes, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control 68 hours 34 minutes into the mission of Apollo 7. Spacecraft is approaching America. It will be over Texas very shortly at which time we should have some updates for the crew. Let's join the conversation.

CAP COM Apollo 7, Houston through Texas.

SC Roger, Houston, Apollo 7.

CAP COM Roger. Good morning.

SC And how are you doing?

CAP COM Very good.

SC Oh, very well.

CAP COM Apollo 7, Houston.

SC Go.

CAP COM Donn, I've got your block data number eight for you also could you switch biomed switch to CDR and could you confirm that you have turned the cryo fans tank one OFF?

SC Roger. Cryo fan tank one is OFF and Wally's still asleep, I believe he doesn't have his biomed hooked up.

CAP COM Okay, copy that.

SC Will get it on him when they get up.

CAP COM Okay, real fine.

SC You can go with your block update.

CAP COM Okay, if you're ready block number eight 045 dash 1A + 311 - 0638 069 + 57 + 34, 4259 046 dash 1A + 313 - 0638 071 + 33 + 1A, 4405 047 dash 1A + 272 - 0649 073 + 08 + 47, 4593 048 dash 4A + 297 - 1650 075 + 52 + 37, 4202 049 dash 4B + 318 - 1650 077 + 28 + 29, 4321 050 dash 3A + 265 + 1371 078 + 47 + 51, 4161.

SC Sorry, Jack, I'm going to have to ask you to run this back in a little slower and it might do to stop now and then so I can butt in and tell you if I'm missing any.

CAP COM Okay, Donn. I guess I'm a little faster than you are this morning. Ah, okay did you get - ah, where do you want me to start? From the beginning?

SC Yeah, I think you might as well.

CAP COM Okay, going back. 045 dash 1A + 311 - 0638 069 + 57 + 34, 4259 046 dash 1A + 311 - 0638 071 + 33 + 18, 4405 047 dash 1A + 272 - 0649 073 + 08 + 47, 4593 048 dash 4A + 297 - 1650 075 + 52 + 37, 4202 049 dash 4B + 318 - 1650 077 + 28 + 29, 4321 050 dash 3A + 265 + 1371 078 + 47 + 51, 4161 end.

SC Okay, readback follows 045 dash 1A + 311 - 0638 069 57 34 4259, 046 1 alpha + 322 - 0638 071 33 18, 4405 047 1 alpha + 272 - 0649 073 08 47 4593, 048 dash 4 alpha --

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 684300 (CDT 6:46A) 237/1

SC 073 08 47 4593 048 plus 4 ALPHA plus  
297 minus 1650 0755237 0202 049-0 BRAVO plus 318 minus 2690  
07728294321 050-3 ALPHA plus 265 plus 1371 0784751 4161.

CAPCOM Roger.  
CAPCOM Donn, could you read the latitude in  
046-1 ALPHA?

SC That's plus 311.  
CAPCOM Should be plus 313.  
SC Roger, 313, thank you.

CAPCOM Okay, that's got it.  
SC Jack?

SC Houston, Apollo 7.  
CAPCOM Apollo 7, Houston, go ahead.

SC Roger. (garbled)  
CAPCOM I didn't copy that Donn, say again.  
SC Okay. Point of pressure AT on the cabin

is 235 millimeters.

CAPCOM Roger, copied that, and Donn, we're  
through at the computer now, you can go to BLOCK on your  
upheld switch. Also you have a GO for 62-1.

SC Roger, understand, GO for 62-1.

PAO This is Apollo Control 68 hours 48 minutes  
into the mission. We are coming up on Canary Islands at  
68 hours 50 minutes and 1 second from now so we will continue  
to stay live for that 7 minute pass, after which time we  
will have a wrap up of summary of the last 8 hours or so  
of the mission. So lets standby for anything from Canary.

CAPCOM Apollo 7, Houston, through the Canaries  
standing by.

SC Roger. We are powering up the SCS for  
the G and N at this time.

CAPCOM Roger, copy.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 685300 (CDT 6.56a) 238/1

SC Houston, Apollo 7.

CAPCOM Go ahead 7.

SC Roger, we took frames 44 through 47 on magazine O, Oscar, at 68 hours and 54 minutes. This is a picture of the weather formations around the Canaries.

SC Okay, Roger, copy that. When you get a chance we would like you to switch your flow proportioning valve to 1 then back to AUTO again.

SC Okay, done.

CAPCOM Thank you. Apollo 7, Houston. You're about 30 seconds LOS Canary. You sure look good going over the hill, we'll pick you up at Carnarvon in about 28 minutes.

PAO This is Apollo Control, 68 hours, 57 minutes into the mission of Apollo 7. CapCom has indicated the Spacecraft looks good going over the hill, and they will be picked up at Carnarvon at 69 hours, 25 minutes. We will have a not too brief, I'm afraid, rundown on the last 8 hours of operation in the Control Center here. Beginning at 61 hours, 27 minutes over tracking ship Mercury and revolution 39, Apollo 7 reported caution and warning panel problems. Their communication was hard to read. On the next station, the Redstone tracking ship at 62 hours, 1 minute in the same revolution, CapCom Pogue contacted the crew and indicated that the data was dumped over Guam and it was being analyzed here at the Control Center. A review of caution and warning panel problems followed and that review indicated that at 61 hours and 5 minutes, the master alarm light went on. At this time, the fuel cells were indicating over 20 amps or amperes flow for each one, average. There was no caution and warning light preceding the master alarm light going on. They reset the master alarm satisfactorily and at 61 hours, 14 minutes, AC bus 1 and AC bus 2 failure occurred. Alternating current through the AC busses is a distributing point for the AC current to go to the several systems of the Spacecraft to utilize such current. After that failure, they reset AC bus 1 and AC bus 2 satisfactorily, then at 61 hours, 30 minutes, they noted that the fuel cells averaged 15 amps each. Astronaut Schirra indicated this is the third AC bus 1 failure and the first AC bus 2 failure. If it was due to transient over voltage, the question was why would both busses fail. The decrease in amps - amperage from 20 to 15 amps average could be due, it was indicated to the Spacecraft power down or a cyclic loads. He suggested that they - down at the Control Center here - check the configuration and the inverter safety wiring, at which point Astronaut Walt Cunningham, the LMP chimed in and indicated that he felt Astronaut Schirra was referring to

PAO changes in the overload sensors. Over ascension at 62 hours, 27 minutes in the 40th revolution, CapCom Pogue again contacted the Spacecraft. Schirra indicated that everything was normal. Pogue indicated that they had finished the playback of the AC bus trouble and it was currently being studied here by the Control Center. Apollo 7 then indicated that the CDR, Schirra, and the LMP, Cunningham were sacking out now. Over the Redstone tracking ship, it's 63 hours, 38 minutes in the 40th revolution. Pogue contacted the Spacecraft and asked the question was the Command Module computer power up over Guam. Eisele indicated yes, it was for a short while, then it was switched off. Pogue indicated that the procedure at 65 hours, 14 minutes over the Redstone again, revolution 41, for isolating the EC bus problem. Pogue asked what position the cabin fan control in, Eisele indicated off. We asked the glycol pump position, Eisele indicated on AC bus 1 the suit compressor position which was on AC bus 1. Pogue then indicated that Astronaut Eisele should not change that configuration, also indicated that he should check the cryogenic fan circuit breakers, if any were popped out and if they were, not to push them. The reply from the Spacecraft was all of them were in. Over Antigua, at 65 hours, 35 minutes and revolution 42, CapCom Pogue gave the crew a flight plan update and that indicated that at 66 hours, 15 minutes they would delete the radar transponder self test. At 69 hours, they would add into the flight plan unstow and set up the TV camera. At 69 hours, 50 minutes to delete reference to the H2 heaters ON. At 70 hours, to add fuel O2 purge. At 71 hours, 41 minutes to indicate TV on. That would be 944 central daylight time. Eisele asked the question at that time, would the TV be scheduled to be on at the same time as the rendezvous radar test, over the stateside pass? Pogue replied, you're right, standby. Then he checked and came back to the crew, to Eisele with the information that that was the correct time. Eisele said, if the TV is not on until 71 hours, 40 minutes, he felt they would hold off installing the TV from the scheduled time of 69 hours, since it would be in the way of the crew members moving around in the Spacecraft. Pogue indicated 7141 is the correct time for TV on. And TV on coincides with the Texas acquisition. At Redstone again, 66 hours, 46 minutes, revolution 42, some telemetry problems were encountered. They received no telemetry here at the Control Center during that pass from the PM, pulse modulation, USB. Then over Antigua at 67 hours, 4 minutes, revolution 43, they are still working on the

APOLLO 7 COMMENTARY, 10/14/68, GET: 685300 (CDT 6:56a) 238/3

PAO TM problem, they still had no PM and over the Canary Islands at 67 hours, 15 minutes on the same revolution, the same condition existed; however, they could receive and still can receive TM on the FM band of the USB, as a backup mode. There are two ideal prime modes on USB, pulse modulation, PM, is for the telemetry and also for the TV system; and FM, frequency modulation, is for dumps of information and real-time data. When - since the PM portion is out, that cuts out 50 percent of the capability of the USB, which simply means that the TM and the TV would have to alternate with dumps and real-time data, using the FM system as a backup mode. Over Canary Islands at 67 hours, 15 minutes, revolution 43 CapCom Pogue indicated that the inertial measuring unit should go to IDLE or PU as it is referred to at Carnarvon, and there is still no PM at that time, so they're still using the FM backup mode for telemetry and data dumps. Over Carnarvon at 67 hours, 50 minutes, revolution 43 CapCom Pogue talked to the Spacecraft again, and updated the Spacecraft with a program 27, Command Module computer update. Rendezvous radar test update and talked about the AC bus problem, which we have encountered. The conclusion from the Control Center here was that the glitches associated with the cycle of OFF osition of both of the oxygen cryogenic fans, caused a surging of the AC busses or ...

END OF TAPE

PAO which is associated with the cycle of OFF position of both of the oxygen cryogenic fans, causing surging of the AC busses or distribution points, to overvoltage conditions. It seems to be a problem at low loads on the AC busses not at high loads. So the proposed solution was sent up to the spacecraft that the O2 fans on tank number 2 be turned on and at the same time the O2 fans on tank number 1 be in the OFF position. And if solution is correct, the AC busses would stay on the line. Then they would propose to periodically switch the O2 fans, tank number 1 to ON, and the O2 fans, tank number 2, to OFF. In this way, one AC buss would be protected at all times from overvoltage conditions. On the Texas pass we just had, at 68 hours 34 minutes, revolution 43, CAPCOM Pogue again contacted the spacecraft and asked for a confirmation of the O2 fans on tank number 2 were on and the O2 fans on tank number 1 were off. Astronaut Eisele gave him that confirmation and indicated that Schirra was still asleep. At that time, Astronaut Pogue relayed from Flight Director Jerry Griffin that they had a go for 62 dash 1, which means that they have a GO condition for 61 orbits. We are presently crossing Africa, we will come up on Carnarvon at 6925 into the mission. The commander and LM pilot, Schirra and Cunningham, should be awake at this time. They will all go into an eat period and we will start a new day at 69 hours 10 minutes into the mission of Apollo 7, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 692630 (CDT 7:32 a) 240/1

PAO This is Apollo Control, Houston, at 69 hours 26 minutes into the flight. And through Carnarvon this morning Jack Swigert just established contact with a rather sleepy sounding Walt Cunningham. Here is how that conversation is going.

CAPCOM Apollo 7, Houston, through Carnarvon.  
SC Roger, Houston. Good morning Jack.  
CAPCOM Good morning, Walt. How are you this morning?

SC Fine.  
CAPCOM We'll be standing by.  
SC Hey Jack; I have a question on our low quad, what quad; yesterday it was reading 47 percent and we would like that (garble) pressure around the 3 percent level and switch to secondary propellants and end the loop at 43; over.

CAPCOM Okay, stand by; I'll get you the NP on that here. Apollo 7, Houston.

SC Go ahead Houston.  
CAPCOM Walt, you are about 25 pounds away from the point at which you should switch, which is about 6 percent so you are quite a ways away so there is no need to hurry on that now and we'll give you, when you start getting close, a gage reading of which you should switch.

SC Roger, and will we switch quad by quad?

CAPCOM Affirmative. Quad by quad.

SC Okay, (garble)

CAPCOM Say again.

SC

CAPCOM Oh, a map update? Stand by.

Apollo 7, Houston. We'll be talking to you, we'll pick up HSK in about 4 minutes; we'd like you to turn up your S band.

SC Roger.

CAPCOM And I have your map update Walt.

SC Go.

CAPCOM This is for rev 43. The GET is at 68 plus 29 plus 00. Longitude of the node 112.7 degrees west, right Ascension of 05 plus 33.

SC Roger. Roger.

CAPCOM Apollo 7, Houston through Honeysuckle.  
Apollo 7, Houston through Honeysuckle.

SC Roger; this is Apollo 7; can you read?

CAPCOM I read you fine now. We need to switch the biomed switch to CDR.

SC Roger. Won't do any good; he's not plugged up.

CAPCOM Okay, when he gets plugged up, would you do it?

SC Okay, and I got a high pitched squeal on

APOLLO 7 COMMENTARY, 10/14/68, GET: 692630 (CDT: 7:32 a) 240/2

S band; how about you?

CAPCOM Roger Walt. We've commanded backup voice there because we've lost the PM and we're going on FM now. We got the voice on the SM.

END OF TAPE

CAPCOM Roger, Walt. We are - we've commanded because we've lost PM and we are going on FM now. We've got the voice on the FM subcarrier.

SC Okay. What's the status on our tape recorder?

CAPCOM Stand by.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston.

SC Apollo 7 here.

CAPCOM Roger. Walt, when you want to use the tape recorder, go to low bit rate and record. When you are ready, when you are through recording and want us to dump it, let us know and we will interrupt real time data and dump it.

SC Is this a change for our normal operating procedures for the flight? I am not reading you any more.

CAPCOM Okay. Walt, what we have lost is the PM downlink. We are on the FM downlink now, which means we are time-sharing DSE with real time downlink.

SC Roger. Have we lost that permanently?

CAPCOM Is hasn't been determined yet. We are going to do a little bit of checking here.

SC Okay. Well, I'll take the tape recorder back and - on 59 hours and 39 minutes.

CAPCOM Okay.

SC You are still going to keep the book-keeping on it?

CAPCOM Okay.

CAPCOM Apollo 7, Houston. LOS Honeysuckle, pick you up at Guaymas.

PAO This is Apollo Control Houston. We have finally lost contact via Carnarvon station. We are 69 hours 42 minutes in the flight. The weatherman has sent us his happy report this morning and it goes like this. In the western Atlantic areas, the weather will be partly cloudy, winds will be easterly 10 to 15 knots, seas about 4 feet, temperatures in the high 70's. In the east Atlantic, mostly clear to partly cloudy skies, easterly winds 12 to 15 knots, seas 4 feet, temperature in the mid-70's. In the western Pacific areas where Apollo might land if it had to, easterly winds 12 to 15 knots, seas 4 to 5 feet, and the temperature is ranging from the low 70's in the north to the low 80's in the southernmost landing areas. In the northern part of mid-Pacific landing zone, weather is mostly cloudy with scattered showers, winds are easterly 15 to 18 knots and with seas an average of 6 feet. The temperatures are in the mid-70's and the southern parts of the same zones

APOLLO 7 COMMENTARY, 10/14/68, GET: 693630 (CDT 0742am) 241/2

PAO the weather is partly cloudy with southerly winds of 15 knots and 5 foot seas. The spacecraft crew will perhaps have the opportunity to see a tropical developing in the Carribean today, that is out in the area of the Windward Islands. At 69 hours and 44 minutes into the flight, this is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 700625 (CDT 8:12A) 242/1

PAO Apollo Control Houston here 70 hours  
6 minutes into the flight and we are talking to the crew  
through Guaymas. Here's how it is going.

CAPCOM Apollo 7, Houston, through Guaymas.

SC Apollo 7 reading 5 by 5.

CAPCOM Roger 5 by. Walt, we want to delete  
these Com tests that we were going to do over this stateside  
pass here, or over Canaries.

SC Roger, understand.

SC Houston, this is Apollo 7.

CAPCOM Go ahead 7.

SC Roger, we have a (garbled) problem.

We are unable to get a (garbled)

SC And as a result of this we are not  
aligned at this point and possibly will not be able to support  
the WSMR test. (garbled)

CAPCOM If I copy you, Wally, understand you  
have had a problem in aligning the platform and you may not  
be able to support the WSMR test, is that CHARLIE?

SC That is CHARLIE. The problem apparently  
is the MARK button.

CAPCOM A problem with the MARK button, Roger,  
understand.

SC Yes, we had (garbled) Jack, it was  
attempted in the P51, and step 4 we have a flashing 51 and  
calling for a mark, we pushed the MARK button repeatedly  
and it will not go on to the next display. Apparently it's  
not accepting the mark, or else the mark button is filled,  
I'm not sure which. I did check - I did check a bit in  
Flagwood 74, the L53 flag, and that was set when the 51  
was flashing. I also did a CNC sales check and that turned  
out okay and we did a halting 53, by that I mean we just  
ran through the program without actually maneuvering. It  
seemed to work fine. We did punch the ENTER button, but  
the computer progressed through the program.

CAPCOM Okay, Roger Apollo 7. Looks like we're  
reading your DISKY now. You're still on Program 51 with  
noun 70?

SC Negative. We've got 2 in there right  
now. Do you want me to call it back up?

CAPCOM Okay, Yes, I guess we missed a LOCK  
on data.

SC Okay.

CAPCOM Roger, understand, copy that you had  
a failed pre mod processor and you're going to run the  
rest of the flight in AUXILIARY.

SC Negative. We are -

CAPCOM Walt, we're working on a trouble shooting  
procedure on this. I'm sorry I missed part of your transmission.

APOLLO 7 COMMENTARY, 10/14/68, GET: 700625 (CDT 8:12a) 242/2

CAPCOM We'll be trouble shooting this and we will get you a reading on it shortly.

SC Hey Jack -

CAPCOM Just a minute Walt.

CAPCOM Apollo 7, Houston.

SC Go Houston.

CAPCOM Roger. Walt we had a problem last night with the normal PM where we lost voice and telemetry sub carrier of the normal PM and we're devising a trouble shooting procedure now. We'd like for you to stay in this present configuration until we've gotten that procedure up to you. You can use the tape recorder as you want as long as you are in LOW bit rate.

SC Okay. I picked up the tape recorder when it was already played out. I rewound it, it's standing by for a dump now in case he has something on it. Do you want a dump?

CAPCOM Walt, did you have very much of a voice transcription on that tape recorder?

SC I don't know, the whole tape has been recorded, so it's going to take you about 8 minutes for a complete dump.

CAPCOM Okay, standby.

CAPCOM Apollo 7, Houston.

SC Roger go.

CAPCOM On the tape recorder, there's nothing there that we feel we'd like to dump it for unless you have made some voice transmission in there that we don't know about.

SC The only thing we might lose that I can think of would be some of this film log and I think we can cover that another way.

CAPCOM Okay, we won't dump it then.

SC Okay, we'll go ahead and only data run when we want to record something. That way we will limit the amount of time we tied up for dumping.

CAPCOM Roger.

end of tape

CAPCOM Apollo 7, Houston.  
SC Roger, Houston, Apollo 7. How do you read? Over.  
CAPCOM I read you fine. We've got a few things to try, Donn, to check the MARK button.  
SC What did you say again, Jack?  
CAPCOM We have something we would like you to do to verify the operation of the MARK button. While in program 00, we would like to have you press the MARK button and verify whether you get a PROGRAM ALARM.  
SC Okay, here goes. I do not get a PROGRAM ALARM.  
CAPCOM Okay. If you don't get a PROGRAM ALARM now, press the MARK REJECT button while in PU there, and see whether you get a PROGRAM ALARM.  
SC Roger, pressing MARK REJECT, I get no PROGRAM ALARM.  
CAPCOM Roger, copy that. During this next night pass, we would like you to try P51 again. If you don't get any response from the MARK button, then try P53 and P54.  
SC Jack, do you have any (garble)  
CAPCOM Roger, copy.  
SC Roger. (garble) Got those updates on our fuel status. This is the reason I'm concerned about it and I sure do (garble) TV (garble) problem.  
CAPCOM Okay, Wally, Stand by, we are going to discuss that end.  
SC Okay. Realize that your new 53 is (garble) and use the (garble) for burns.  
CAPCOM Roger, we understand.  
SC Pretty busy getting set up here. Guess you want to watch our (garble) TV.  
CAPCOM Okay, we will discuss that Wally. We will be back to you. In the mean time Walt, we would like to have you read off the positions of your S-band normal and S-band off switches here so we could start the troubleshooting procedure on this PM.  
SC S-band normal switches are in voice, PCM and ranging, S-band off is still in tape and I guess I may as well turn the tape switch off. I still have power

APOLLO 7 COMMENTARY, 10/14/68, GET: 701625 (CDT 08:22a) 243/2

SC  
CAPCOM  
END OF TAPE

switches, SCE normal PMP on off, over.  
Roger, we copy.

APOLLO 7 COMMENTARY, 10/14/68, GET: 702625 (CDT: 8:32a) 244/1

SC Powers which is the SEE mode  
on OFF; over.

CAPCOM Roger; we copy. What are the positions  
of your transponders Walt?

SC Secondary of the transponder and power  
up above in HIGH.

CAPCOM Okay, copy. We'll be back -  
SC (garble)

CAPCOM Go ahead.

SC Over a place now; why don't I turn the  
fan off and tape switch on?

CAPCOM We'd rather have you just leave it on  
Walt.

SC Okay.

CAPCOM Apollo 7, Houston.

SC Roger Houston. Go.

CAPCOM Okay, if we can't get through the P51  
and 52 using the MARK button, go ahead and use the COAS and  
get 53 and 54 for the IMU alignment.

SC Roger Tom. My concern is; are you  
willing to expend the Service Module fuel for the (garble)  
transponder test? Or are you asking me to be willing to?

CAPCOM Well, the whole thing Wally; we want  
to get the platform aligned first and see what we've got.  
We'll talk about the rest of it down the line over Carnarvon.

SC I think we've got a problem and I go  
along with just the (garble) alignment, true.

CAPCOM We'll try the COAS one time; it's worth  
it one time in case that we can't get the optics going.

SC That's it.

CAPCOM All right.

SC Will you give us a total number of pounds  
of RCS propellants remaining; I can put it in my (garble)

CAPCOM Yes, okay, Walt. We're going to give  
you this over Carnarvon.

SC Standing by.

CAPCOM Roger. Apollo 7, Houston. Your total  
usable RCS fuel now is 750 pounds.

SC That is 750 pounds goes on my chart at  
70 hours into the flight. I want total number of fuel be-  
cause I think, at this night side here, the unusable is al-  
ready taken off the bottom.

CAPCOM Okay. Now the 750 is usable.

SC Well, would you take a look at your  
copy of my onboard chart and give me a number that I can  
stick on that?

CAPCOM Okay Walt. We'll pass that over to you  
over Tananarive; we're about to lose you here. Tananarive  
at 13 minutes.

SC Okay.

APOLLO 7 COMMENTARY, 10/14/68, GET: 702625 (CDT: 8:32a) 244/2

PAO This is Apollo Control Houston, 70 hours, 33 minutes into the flight. And we have lost contact by the Canary Station, and we will pick up again at Tananarive and conclude that conversation about onboard usable. The precise gaging here, other affects are being figured in here; you heard the flight director tell the CAPCOM to give him 750 pounds which number was passed up. Now in addition to that there is a gaging factor, certain other allowances and the precise overage estimate is also being calculated now. In the course of that ON, you heard a trouble shooting procedure real time wherein Don Eisele was asked to push the MARK button on some of his equipment related to the guidance and navigation system. This gear is down in the lower equipment bay and the MARK button effectively has the capability of putting into the computer certain angles and other mathematical information about a given star when it's properly sighted through the GNN optics. In other words, the pilots look at a star when they are satisfied they have the right star in the window, they press the MARK button and the information regarding angle and such is automatically transferred to the computer. This function apparently is not taking place. The second step in the trouble shooting procedure was to hit the MARK REJECT button, both of which should have produced a warning buzzer, but apparently neither worked. Other devices can be used of course to get this information. The cabin temp this morning is 69 degrees. And at 70 hours and 35 minutes into the flight, this is Apollo Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 704610 (CDT 8:52a) 245/1

PAO Apollo Control Houston here at 70 hours  
46 minutes into the flight. We are in touch with Apollo 7  
through Tananarive and here's how that's going.

CAPCOM Apollo 7 Houston.  
SC Go ahead Houston.

CAPCOM Roger. Walt, the reading that you should  
be having on your chart for RCS fuel is 808 pounds.  
SC Roger 808 temperature supposed to be  
750 and gaining,  
CAPCOM Roger.  
CAPCOM Apollo 7 Houston  
SC Go ahead.  
CAPCOM Okay, I want to check out the alinements  
going out. We've already worked out with Steve here a real  
slick real cool way of doing 53 and 54 using those optics  
down below that should cost us very little fuel. And be  
about as accurate as 51 and 52.

SC Very good. We've done an alinement.  
Let me readout to you.  
CAPCOM Okay, Donn, have you got your book out  
for P53?  
SC Standby one.  
SC Okay Go.  
CAPCOM Okay, on P53 you'll enter 53 in step 1  
and step 2. When you acquire the two stars we will use  
the sextant and telescope down below, and when you get it  
in the sextant you will note the shaft and trunion angles  
that you have there. You will have to call Verb 16, Noun 91.  
Go back and enter above as Verb 06 Noun 92 in step 3. You  
can proceed and then you'll hold attitude at ENTER. If  
the attitude hold is brought on it should be about as  
accurate as we had before. Over.

SC Okay (garbled)  
CAPCOM Okay  
SC Roger Tom. How much more time this  
pass?  
CAPCOM We've got about 2 more minutes.  
SC Okay. do you want to go through and  
read that one again?  
CAPCOM We've got 4 minutes. Do you want me  
to read it over?  
SC Garbled.  
CAPCOM Apollo 7, say again.  
SC Yes, Tom, will you go through that  
again a little bit slower. I was a little bit behind in  
copying down the procedures. I'm ready to go again.  
CAPCOM Okay. We go through step 1 and step 2  
of P53, and you can use the course aline option if you want

APOLLO 7 COMMENTARY, 10/14/68, GET: 704610 (CDT 8:52A) 245/2

CAPCOM to. But we acquire the stars within  
the telescope.

SC Roger.

CAPCOM Okay. Once we get the NAV star in the  
telescope then go ahead and get it into the sextant.

SC Okay. I receive (garbled)

CAPCOM Okay. When you get it into the sextant  
then you can hit Verb 16 Noun 91 to read the shaft and trunion  
of that star.

SC Roger.

CAPCOM Okay, with that value you go back in  
step 3, you see flashing Verb 06 Noun 92 you can enter now  
92 which is the value you have read out.

SC Roger.

CAPCOM Then proceed.

SC Proceed.

CAPCOM Then you can use the ENTER button for  
your mark.

PAO This is Apollo Control Houston at 70  
hours 52 minutes into the flight through Tananarive through  
which we lost contact. About a minute ago you heard Tom  
Stafford give Apollo 7 an alternate way of getting the shaft  
and trunion, the two angles required to do a navigational  
plotting on a star - he gave them an alternate way to get  
that information into the onboard computer. Earlier we had  
established that the MARK button, or the MARK device through  
which that information is normally inserted into the computer  
is - we established that it is inoperative. We are now going  
through the data insertion keyboard, which on checking we  
discover is another way to put that information in. At  
70 hours 53 minutes into the flight this is Apollo Control  
in Houston.

END OF TAPE

PAO This is Apollo Control Houston 71 hours 17 minutes into the flight. Over Carnarvon a few minutes ago, we had some conversation. We - the crew was quite busy doing star alignment and getting our attitudes set up for the next pass across the States. They - the transponder, the radar transponder test out of White Sands, they are to be blunt end forward, since the 00 attitudes, that is aligned straight upright, blunt end leading, as they come across the White Sands Missile Range near Los Cruces, New Mexico. And precisely one alignment they will have, I think they will simply go amiss, the flight plan shows they go into free drift after the White Sands pass. We planned to tell them, as they started across the States, Tom Stafford called several times and they were busy and didn't get the word via the Honeysuckle station in east Australia, but we do want to tell them that we are planning a minor burn later today to adjust their apogee and to make our total onboard fuel redlines a little more acceptable all the way around. They are not out of alignment with the overall program as planned but the affect of an adjusting burn would be to lower apogee somewhat and to bring those redline values even into more conservation views. Here is the tape by Carnarvon.

CAPCOM Apollo 7, Houston.  
SC Go ahead, Houston.  
CAPCOM Roger, Apollo 7. How is the alignment coming?  
SC We are still star reading right now.  
CAPCOM Okay, understand you are still in program 53.  
SC We are just trying to acquire star report time.  
CAPCOM Okay.  
CAPCOM Apollo 7, Houston. I'll go ahead and brief you on what we've got planned.  
SC Wait, let's put down what (garble)  
CAP Yes, yes okay, I'll just stand by here.  
SC Okay, I would like to (garble)  
CAPCOM All right.  
SC Houston, Apollo 7.  
CAPCOM Go ahead, Wally.  
SC Okay (garble)  
CAPCOM That was too fast. Say again.  
SC Donn is in the (garble) right now, but is it necessary for him or could I take it?  
CAPCOM No, it's for the whole crew and the main thing is to get the platform aligned and Wally, if you

APOLLO 7 COMMENTARY, 10/14/68, GET: 711705 (CDT 09:22a) 246/2

CAPCOM would turn up the S-band at 710845  
we will talk to you through Honeysuckle.  
SC Very good. We did need the arm to  
curve on this TV camera, we are trying to get it out now.  
CAPCOM Okay, we want to see how the platform  
alignment comes out and we will talk to you over Honeysuckle.  
SC Okay. I've got (garble)  
CAPCOM Okay.  
CAPCOM Apollo 7, Houston.  
SC Roger Houston.  
CAPCOM Okay, right now when Donn is reading  
the noun 91, is he reading - is he going to monitor real  
time with verb 16 or verb 06?  
SC I am using 16, Tom, and I am meaning  
to freeze it when I get right on it.  
CAPCOM Okay, that sounds good, Donn. Sounds  
real good.  
CAPCOM Apollo 7, this is Houston through  
Honeysuckle. How do you read?  
CAPCOM Apollo 7, this Houston through Honey-  
suckle.  
CAPCOM Hello, Apollo 7, this Houston through  
Honeysuckle, how do you read Wally?  
CAPCOM Hello, Apollo 7, this is Houston, how  
do you read?  
CAPCOM Hello, Apollo 7, Houston, over.  
CAPCOM Apollo 7, this is Houston standing  
by through Honeysuckle.  
CAPCOM Apollo 7, this Houston, how do you  
read?

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 10/14/68, (CDT: 9:42) 247/1

PAO This is Apollo Control Houston. 71 hours, 37 minutes into the flight. We are trying to establish com with the crew by the Huntsville station, and the signal is very shakey, as you recall in the earlier passes, the Huntsville com has not been the best and it is no better today. In a few minutes we expect to acquire through Guaymas. In a very cloudy communication, cloudy voice communication with Apollo 7 a few minutes ago, the crew commander advised that they were GO for this pass, GO for the transponder test at White Sands, and GO for the television through Corpus. We should acquire by the Guaymas station - stand by 1 - we'll acquire at 738 which is right now and now Wally is coming in loud and clear.

SC Sounds like it's (garble) coming in pretty good, huh? (garble) at about .18 degrees.

CAPCOM That's not bad.

SC (garble) go ahead and did an alignment to the (garble) was 58 minutes.

CAPCOM Okay, that's what we -

PAO Now we have established good communications with the crew; let's cut in on that conversation now.

CAPCOM We want the DSC to stop at 7146 plus 00.

SC Roger; we got it.

CAPCOM Okay. Now after we finish, when we come up for the TV pass, for Walt, make sure that the tape position is OFF; over.

SC Roger.

CAPCOM Tape off now.

CAPCOM Okay, Walt, again, the tape should stop the DSC and the tape off at 71 plus 46.

SC The tape is stopped now and the DSC is running and I can keep the DCS running; can I keep the DSC running with the TV on?

CAPCOM Yeah, you sure can Walt; no problem.

SC Roger.

CAPCOM Apollo 7, Houston. Looks like we have a real pretty day down here.

SC Roger; that's the way it looks. Houston, this is Apollo 7.

CAPCOM Go ahead.

SC Roger; what time do you want the TV turned on?

CAPCOM Say again.

SC At what time do you want the TV turned on?

CAPCOM In about - Roger, we are ready for TV now. Turn it on.

SC TV going on.

PAO This is Apollo Control here. We just heard Walt Cunningham acknowledge he was turning on the TV. We are looking at a rather snowy TV screen and we see nothing at this point.

PAO Still nothing - a little snow pattern. Which is considered just normal TV line noise. Most of the flight controllers have the proper channel punched up. And now we are getting some indication from the network controller that the signal is too weak to read. We are 71 hours and 43 minutes into the flight. And we are about, nearly 1 minute beyond the time of the planned Corpus acquisition. Here comes the picture and it's White. We look at Eisele, nice shot. Looks straight up, and he's moving. He's really quite clear; let's all have a look at it.

CAPCOM Yeah, we're picking it up, I can read it; just a minute. It says, "From that lovely Apollo," something - he doesn't write - "high on top." It looks good; I can see Wally handle it now, and Don has a smile on his face and there's Walt. The definition is pretty good down here; I can see center hatch. Actually I am amazed; it looks real good. Hey Don, how about saying something since you're paying.

SC Say again.

CAPCOM Hey, I can read you; you're loud and clear. It really looks good; I am amazed.

SC It's coming in - you want us to put -

CAPCOM Lean back a little bit, you are too close to the camera; there you are. We'll have Cecil Stafford directing.

SC Roger.

SC I forgot to shave this morning.

SC Lost my razor.

CAPCOM Some of the reproductions here are real good; I can look out through Wally's rendezvous window; I can see the COAS up there, the orbit rate ball.

SC We're looking right down the Gulf Coast.

CAPCOM Okay, what's the next one? Little closer Wally.

CAPCOM It says, "Keep those cards and letters coming in folks." and it's loud and clear.

SC Yes sir, a pretty show for the whole family. Would you like to get a look out the window with the TV camera; I can give you the whole island right here.

CAPCOM Okay, let's take a look and see how New Orleans is this morning.

PAO Apollo Control here. You were listening primarily to Tom Stafford talk with the crew; Deke Slayton threw in a couple of lines. Here we are with a view out the window.

SC Coming into view now.

CAPCOM Okay, we're looking.

SC (garble)

CAPCOM Okay.

PAO The crew reports that they are changing

APOLLO 7 COMMENTARY, 10/14/68, GET: 713745, (CDT 9:42) 247/3

lenses and that they are right over Lake Ponchatrain outside New Orleans.

SC We're are passing now over Mobile Bay.  
CAPCOM Okay, we're starting to get it.  
Looks like there's a few clouds down there. Yeah, we can see it. Is that the coast line you're pointing right now?

SC Going over Mobile now, quickly, and  
Apollo 7 (garble)  
CAPCOM Okay, Wally, can you focus one spot for a minute? We can see the orbital rate coming in real fast. There you go. Try to hold it on one spot. Now you can see the coast line.

SC There's engine roll here.  
CAPCOM Okay.  
SC We had a beautiful day here; I can give you a good shot of the Cape today.  
CAPCOM All right. Yeah, there's the coast line; it's coming in good.

SC Roger.  
CAPCOM Real good.  
SC (garble) that we used in line with what?  
CAPCOM All right.  
PAO That's the Florida peninsula we just crossed in about 1 minute.

CAPCOM Okay, are you passing over Florida now?  
SC Affirmative.  
CAPCOM Okay, if you can just hold it. The big thing on that long lens is just to hold it still for one spot and then move to another it looks like. You can sure see orbital motion.

SC Tom, we used (garble) out again.  
CAPCOM You're coming in garbled Wally; I couldn't hear you.

SC This is what constellation we used for the alignment.  
CAPCOM Okay, stand by, we'll get it.

SC Here's the island.  
CAPCOM I thought you said -  
SC We did.  
PAO Apollo Control here. Among the more interested viewers of these live pictures as they come in is Wally Schirra's wife, Jo Schirra, who I just observed lighted her second cigarette in the course of this pass. She's with Marjorie Slayton, the wife of the flight crew operations director here in the Control Center.

CAPCOM Looks like we found out what's wrong with the MARK button.

SC Very good.  
CAPCOM Okay, it looks like there is an improper

APOLLO 7 COMMENTARY, 10/14/68, GET: 713745 (CDT: 9:42) 247/4

exit from a program yesterday and with the IMU's aligned we select Program 20; if you got a piece of paper we'll copy it down to you.

SC Ready.

PAO Apollo Control here - it looks like we are out on the edge of the Cape acquisition here; here we come in sharp again, it looks like they brought the camera back inside.

CAPCOM You are in verb 57 enter. After that you will key enter and then you will select program 00. Now what that does is cause a reset of flight work 2 bit 14 which is preventing that mark from getting in.

SC (garble)

CAPCOM P00.

PAO And Apollo Control here. We have lost the picture; apparently have lost lock - here's something more from the crew.

SC (garble)

CAPCOM Roger; that should reset that flight work and you should be all set to use Program 51 and 52 -

PAO That's affirmative; now we have lost lock; the spacecraft is out near Bermuda. However, we are now ready to give you the NASA instant replay of that entire pass. Could we see the tape from the - I am sorry - it is not quite ready yet. The picture came in remarkably clear and it was some time after Cunningham reported turning the switch on. We looked at it quite awhile and it seemed to me, we'll have to go back and listen -

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 715230 (CDT 9:57a) 248/1

PAO ...we looked at it quite awhile, and it seemed to me, we'll have to go back and listen to the tape itself; but it seemed to me the clarity came up about 200 percent when we changed lens. Then another lens change was made as Walt Cunningham put it out the right hatch, the right side window. Standby 1 and see if we are ready with the tape.

SC That last land we saw was an example of (garble) what made up our obscure DPO's.

CAPCOM Okay.

SC This is still the first phase.

CAPCOM Roger.

PAO Here is the video tape being run on all, at least news center monitors.

SC When you pass up the total RCS propellant remaining, I would like to get a readout for each quad also.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Okay, what we'll plan to do is put you the NAV load for this maneuver up over the Canaries and we'll be passing over that in about another 4 or 5 minutes.

SC Roger, standing by.

CAPCOM So, if you get a chance, go ahead and select programs 00.

SC We have already tried to (garble).

CAPCOM Okay.

CAPCOM Apollo 7, Houston through Canary.

SC ROGER

CAPCOM Roger, I read you 5 by.

SC Jack, would you say again the burn time, for burn 3.

CAPCOM Right, 7548. We're going to be sending you up some NAV loads and I'll be passing you up a maneuver pad here.

SC Fine.

CAPCOM Apollo 7, Houston, if you will go to ACCEPT, we'll send you up a NAV load.

SC Roger, accept.

CAPCOM Walt, you might let me know when you're ready to copy your maneuver pad.

SC Copy.

CAPCOM Roger, SPS 3075475860 minus 00550 plus 02000 plus 004101601 plus 09030200730584 minus 086 minus 0460 plus 09.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68 GET: 720230 (CDT 10:07a) 249/1

CAPCOM 0 plus 09 303484 323 075 05 all balls plus 1330 minus 05642 1256 000 000 000. Remarks, SCS control 2 second to jet ullage using quads B and D. You will be out of plane to the south slightly retrograde, slightly pitch down, the sextant star will not be visible after 075 plus 35 plus 00.

SC Roger. I'll hit the remarks first. We won't be doing a 2 jet ullage on SCS (garbled) burn 3 075 47 5860 minus 00550 plus 02000 plus 00410 1601 plus 0903 02007 30584 minus 06 minus 046 009 30 3484 323 075 05 0000 plus 1330 minus 05642 1256 all balls on the roll, pitch and yaw, it's SCS burns for 20 seconds and (garbled) on the 2 jet ullage. Out of plane south slightly retrograde and sextant (garbled) 35 hours 35 minutes.

CAPCOM Roger. The reason we are doing a 2 jet ullage, Wally, is to even up the RCS fuel. When we do this all the QUADS will be even and we will be in fat shape for an SCS RCS deorbit red light.

SC You said a 2 jet SCS (garbled) I can't do it.

SC Jack, the only 2 jet ullage we're going to do is on a G and N burn.

CAPCOM Roger. We'll come back with you over that - over Tananarive. And we have the loads in and verified the computer is yours.

SC Houston, Apollo 7 (garbled)

CAPCOM Roger say again.

PAO This is Apollo Control Houston 72 hours 7 minutes into the flight and it appears we have lost lock through the Canary station. The spacecraft now is moving across Africa. To recap a couple of the highlights of our first television pass of Apollo 7, you saw Wally Schirra extend two cards down camera range. The first one read "Hello from the lovely Apollo Room high atop everything." And a little later you say him hold another card up, both obviously in jocular vein, it said "Keep those cards and letters coming in, folks." We've timed the total television pass from receipt of the first seeable to the loss of the signal out over the Atlantic, at 7 minutes. A little bit shorter than we had anticipated, but all in all we are agreed that it was a good, a very valid first test. It had comments in the Control Center here from varied flight controllers, words like "Amazing", "Much better than I expected", generally that would describe the reaction here in the Center. We will plan very likely to do an apogee adjustment burn a little later today. That will be discussed, I suspect, over Carnarvon on the next pass, and the affect of this will be to lower apogee, which is presently running

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PAO about 160 by 122 and it will have the happy affect of adjusting - of bringing our RCS budgets - our onboard propellant budgets to more conservative alinement. In the television pass Donn Eisele was wearing his space suit. He still has it on. We could see his hoses set up unpressurized, and I'm looking at a rerun now and it's pretty clear that Wally Schirra and Walt Cunningham are in their flight coveralls, powder blue coveralls. Of course, we don't have color television yet, but they are blue in color with a NASA wishbone and as I understand it the picture is being replayed to the news center so they can have a look. It's 72 hours and 10 minutes into the flight. This is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 723800 (CDT 10:43a) 250/1

PAO This is Apollo Control Houston 72 hours 38 minutes into the flight. We have some conversation which was taped back at Tananarive. We will play that for you and we are now moving into the - rapidly moving into the Australian area and we will come right into that. First, there is this word on the transponder test from White Sands, immediately preceding that most successful TV pass. The data at this point is inconclusive. There is some indication that the test didn't work or perhaps we weren't pointed just right, or perhaps the transponder in the spacecraft had not been turned on. I say again, the data is inconclusive, but the test objectives were not fulfilled in that particular pass. We have other revs across White Sands and the test, of course, can be repeated. Now let's hear the conversation via Tananarive.

CAPCOM Apollo 7, Houston through Tananarive.

SC Roger Houston, read you loud and clear.

CAPCOM 055. On the - on this two jet ullage, Wally, we felt that we could do a two jet SPS ullage, RCS ullage and save about 8 pounds of RCS fuel. You can do this by having the pitch and yaw channel switches at A and pulling pitch main A circuit breaker. How do you feel about that?

SC We've got to fly (garble) energy, Jack, (garble) we will give you people a pretty tight burn.

CAPCOM You will still have two jet ullage attitude hold.

SC The main thing is I don't think you will observe it (garble)

CAPCOM Okay, if you are uncomfortable about it, we will go with the four jets. We just thought we could save you about 8 pounds of fuel.

SC Okay, we will go with four jets.

CAPCOM Okay, understand.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Okay, Wally. On this AC glitch, what they are doing is we have a series of tests being run off line first, but we're using 106 at the factory to checkout all the AC systems in the sensing systems. At the beach, they are testing the whole lashup, the cryo stands, heaters, and everything and we should have some data on this by tomorrow.

SC Okay Tom. I think you should realize that all that trouble of going into the hybrid gears is

APOLLO 7 COMMENTARY, 10/14/68, GET: 723800 (CDT 1043a) 250/2

SC that kind of glitch coming along.  
CAPCOM That's right and that is why we just decided to go ahead and do this burn 3 and get the perigee down.

SC Okay, we will be doing two jet here, we will have to kick it over for a while.

CAPCOM Okay, then we have got plenty of time to pick it up later. No problem on that.

SC Okay.

CAPCOM And they don't plan - they are not suggesting running any test on board up there, what with the AC power. We will do it all on the ground and tell you what we find out.

SC Okay. We are knocking off all the fuels since we want to stay out of gimbal lock.

CAPCOM Say again.

SC We are knocking off all fuels except for one in gimbal lock.

CAPCOM Okay. What we are going to do is delete to the present all flight plan items after 72 hours to prepare for this burn.

SC Concur.

CAPCOM Apollo 7, Houston. One minute to LOS Tananarive, we will pick up ARIA 2 in about 2 minutes and then on through to Carnarvon.

CAPCOM Apollo 7, Houston through Carnarvon.

SC Roger, you are loud and clear, Jack.

CAPCOM You are loud and clear, Wally. We have a procedure for troubleshooting that loss of the voice and telemetry subcarrier that we had. Are you ready to go?

SC Roger.

CAPCOM Okay, we are just going to walk you through it Walt. We would like you to switch the S-band transponder switch to primary, pausing in OFF as you go through from secondary to off to primary.

SC Jack, go slower than that and I will follow you up again.

CAPCOM Okay. We would like to switch the primary S-band transponder switch into OFF, pausing a bit, and then to primary.

SC S-band off.

CAPCOM S-band transponder.

SC Okay, gone into primary, then off, then back to primary. Got it?

APOLLO 7 COMMENTARY, 10/14/68, GET: 723800 (CDT 10:43a) 250/3

CAPCOM                    Okay, we got it. Okay, now we are  
going to wait a bit and look at some data here.  
SC                         Roger. I intend to blow my nose.  
CAPCOM                    All right, go ahead.  
SC                         Houston, Apollo 7.  
CAPCOM                    Go ahead.  
SC                         Do you have "tut, tut, tut" to your  
receiver?  
CAPCOM                    Negative. Negative, Wally.  
SC                         Okay, affirmative digital pilot goes  
"tut, tut, tut".  
CAPCOM                    Roger, stand by.  
SC                         Whatever that was, it stopped it.  
CAPCOM                    Roger.  
SC                         It must have been something wrong  
with Carnarvon's gear transmitting.  
CAPCOM                    Roger.  
SC                         Okay Jack. Carnarvon probably had a  
(garble)  
CAPCOM                    Apollo 7, Houston.  
SC                         Go Jack.  
CAPCOM                    Roger. On the results of this trans-  
ponder shift that we've gone through. We've got our voice  
and telemetry subcarrier back. We are go on the primary  
transponder. The problem was in the secondary transponder,  
so we are go the way we are.  
SC                         Very good, I'll leave it this way.  
CAPCOM                    Wally, do you still have the clicking  
in the receiver?  
SC                         That was at Carnarvon. They got on  
it right away and clicked it off.  
CAPCOM                    Okay, real fine.  
SC                         We were paying attention to it, they  
did a very good job.  
CAPCOM                    Roger.  
SC                         In fact, I would say the team worked  
harder today than they did yesterday.  
CAPCOM                    Say again, Wally.  
SC                         I say, this team worked harder today  
than it did yesterday.  
CAPCOM                    You bet your life.  
SC                         Good show.  
CAPCOM                    Apollo 7, Houston. You want to turn  
up your S-band volume. We are just about to lose you over  
Carnarvon.  
SC                         Roger.  
CAPCOM                    And 7, looks like that right now we

APOLLO 7 COMMENTARY, 10/14/68, GET: 723800 (CDT 10:43a) 250/4

CAPCOM observe the primary evaporator has  
dried out again.

SC

It figures.

PAO

And this is Apollo Control Houston.

We may get some additional by either Woomera or Honeysuckle, but right now it's pretty noisy. You heard on the loop, the ground, Jack Swigert, our capsule communicator tell Apollo 7 that we had resolved the telemetry difficulty we noted earlier in the day. The troublesome item proved to be a secondary circuit transponder and it has been ruled inoperative. We switched over to the primary transponder in the telemetry loop and we are getting all the data from the - in all possible modes and everything is rosy. This brought a cheer here, a small cheer in the Control Center, and when the word was passed up to the crew, we could hear what sounded like a cheer there, at least Donn Eisele called Walt Cunningham to be sure he knew about it. Apparently Walt may not have had his headset on. So all in all, things are looking up and quite rosy at this point, and we will continue to monitor until the spacecraft moves off the coast of Australia. At 72 hours 46 minutes into the mission, this is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 724800 (CDT 10:53a) 251/1

PAO                    This is Apollo Control Houston, we have lost lock with the Spacecraft now, by Australia and that will bring the circuit down, we'll be back up in about 12 minutes from Hawaii. One additional note, on the television pass, the altitude of the Spacecraft at the time that trans - television transmission came through was approximately 130 miles and descending slightly to perigee which occurred out in the Atlantic. You could say the pass started roughly at 130 miles - nautical miles and probably was 126 or 127 nautical miles at the conclusion of the pass. Tomorrows television show, if you will, is presently scheduled for an elapse time of 95 hours and 25 minutes, that's the Corpus Christi acquisition time. At 72 hours, 52 minutes into the flight this is Apollo Control Houston.

END OF TAPE

PAO This is Apollo Control, Houston, 73 hours 1 minute into the flight. We're on the 46th revolution around the earth and we just put in a call through Hawaii. Here's how it's going.

CAPCOM Aloha. We would like to ask you whether you were able to accomplish the (cut off)

SC Roger. I have the tape recorder being rewound now and it will be ready for dump. We did a (garble) alignment in our last night pass. Used Diphda and Aldebaran and got 5 balls and the star angle difference will be on the tape.

CAPCOM Roger, copy.

SC I mean distortion angle will be on the tape.

CAPCOM Okay, copy that. Walt, we would like to ask you whether you were able to accomplish the switching operation? Apollo 7, do you read Houston? Apollo 7, Do you read Houston? Apollo 7 Houston. Hello, Apollo 7, Houston. Apollo 7, do you read Houston?

PAO Apollo Control here. This pass is running well south of Hawaii. We apparently did not have a good acquisition or good lock on the signal, but the pass was opened by Capsule Communicator, -- Capsule Communicator, Jack Swigert, with the word Aloha. Of course, he is here in Houston, but the signal went out through Hawaii. We will continue to stand by.

CAPCOM Apollo 7, how do you read Houston?  
Apollo 7, houston.

PAO This is Apollo Control, Houston, apparently we are having a little ground communication problems. A line problem apparently. Network Flight Controller just advised that on the last rev, our voice signal from Houston was not reaching Hawaii. Now we are locked up again, let's go back.

CAPCOM Transmission on P52. We would like to know whether you were able to accomplish the switching operation for the WSMR rendezvous radar during the TV operation?

SC I had to the heater on, Donn told me, about 2 minutes. We had not counted on performing that, and the whole sequence idea was a bit (garble). We probably should not even have attempted it, Jack. However, we did turn the heater on for a couple of minutes; turned it to power; we read out the test meter readouts, and I don't know if we passed them down, but we got them logged onboard here. The lock on -- the signal strength never came up above about 1.4 volts, I think it was.

CAPCOM Okay, we copy that.

SC Did you have any results from WSMR?

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CAPCOM Negative; there is no results from WSMR.  
SC Okay, and since we're up pretty well  
on fuel, now, we'd like to try again on the second callout.  
CAPCOM Wally, it looks like we're gonna have  
a chance about - we may have a chance about 30 minutes after  
the burn to get, to try again over WSMR.  
SC Okay, and that might be pretty good.  
We'll have a (garble) and can make out on that one.  
CAPCOM Right.  
SC You stay in burn attitude Houston and -  
CAPCOM Okay. Okay, Wally, I wanted to ask you  
a question. Did you have a problem with your biomed harness,  
one time?  
SC Yes I did. Aren't you reading me now?  
CAPCOM We're reading - center now, you want us  
to go to L and P?  
SC Okay, we have switched to L and P.  
(garble) L and P.  
CAPCOM All right; real fine.  
SC Just to give you a cable connection with  
CDR is in the right seat, L and P is in the center seat  
and CNT is in the left seat. That is per flight plan burn  
3.  
CAPCOM Roger; we copy that.  
SC Roger.  
SC Jack, do you have enough time this pass  
for me to start a tape dump; it's rewind.  
CAPCOM Negative Walt. We'll get you over the  
States for the tape dump.  
SC (garble) command okay?  
CAPCOM Affirmative.  
SC (garble) AOS a two way log. I am still  
LOS.  
CAPCOM AOS and downlink signal is very weak.  
Downlink signal very weak.  
PAO This is Apollo Control, Houston. And  
we are continuing to monitor through the Huntsville area  
but we really don't expect to get a useful voice signal.  
We should acquire from California, a combination of Califor-  
nia and Guaymas momentarily.

END OF TAPE

PAO We should acquire from California combination - a combination of California and Guaymas momentarily. You hear Wally Schirra give us the positioning of the men for burn 3. This is the third burn in our flight plan, which had been programmed for about 95 hours. It is being moved forward in the flight plan and it's presently planned to do this burn at 75 hours and 47 minutes, 75 hours 47 minutes of elapsed time. Reading, we are presently 73 hours and 12 minutes and as I started to say Schirra positioned the people for this burn accordingly. It will be Donn Eisele's burn. He is over in the crew commander's couch on the left side. Walt Cunningham will occupy the center couch, which would normally be occupied by Donn Eisele, and Wally Schirra will be over in Walt Cunningham's couch on the right hand side, the right couch. That was the planned configuration of people for the third burn and a little later in the mission Walt Cunningham will move into the commander's couch and he too will get some experience in handling a burn. We have reestablished Com and let's go back to Apollo 7.

SC Roger, Jack, 5C reads 5 volts full scale. 5D is 5 volts full scale. 6A is 4.9. 6B is 5.0. 6C is 4.8. 6D is 4.9 volts.

CAPCOM Real fine. We have some - due to this transponder problem we'd like to reconfigure some switches there, and then we will be back in the normal configuration for our Com switches. Could we get you to put your power PMP switch to NORMAL.

SC PMP is set.

CAPCOM Okay, your forward rewind switch to FORWARD.

SC Forward rewind switch to FORWARD.

CAPCOM Your record play switch to RECORD.

SC Record.

CAPCOM Your telemetry input switch to LOW.

SC (garbled)

CAPCOM Okay real fine. We're now back in normal configuration.

SC Okay. You asked about my biomed. I checked and the lead was apart again.

CAPCOM Okay real fine.

SC It's too short. They've got to change (garbled). It was alright during flight preparations.

SC Jack, I still have the tapes switch off. Do you want the tapes switch on?

CAPCOM Okay, we want the switches just like you've got them.

SC Okay, the tape is off and the tape is rewound. No motion, standby for your dump (garbled)

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SC in the Com system also to tell you  
that we could not get the glycol evaporator back in right.

CAPCOM Roger, we copy that.

CAPCOM Okay, Apollo 7, did you try and reservice  
the primary evaporator?

SC That's true.

CAPCOM Roger.

CAPCOM Apollo 7 Houston.

CAPCOM Apollo 7 Houston.

CAPCOM Apollo 7 Houston.

SC Go ahead.

CAPCOM Roger. To summarize our findings on the  
Com system, we have found that the secondary transponder  
has failed. We have normal operation on the primary trans-  
ponder and except for the secondary problem our Com system  
is operating normally.

SC Roger.

CAPCOM Apollo 7 Houston.

SC Go ahead.

CAPCOM Wally, on that biomed harness - that  
problem that you reported. Do you think you'll have time  
to do any repair work on it?

SC Afraid not. The next time you are  
reading me if you aren't getting it ask and I can plug it  
back in. It seems to pull out when we exercise, or during  
a sleep period.

CAPCOM Okay, we copy.

SC It's no problem to hook it up.

SC One of the sensors is leaking. You better  
leave it out or pull it off.

SC Houston, this is CDR. Let me give you  
a check of operator light, check my lead. Did you receive?

CAPCOM Standby Wally.

CAPCOM Apollo 7 Houston. We're reading LMP  
data in the center seat.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 732100 (CDT 11:26a) 254/1

CAPCOM Apollo 7, Houston, we're reading LMP data.  
SC Roger. We switched it over, and now it's over in the right seat.  
CAPCOM Okay, we copy the switch. Okay, we're getting good data.  
SC We're getting that radio station interference again.  
CAPCOM Okay. Apollo 7, opposite omni.  
SC Our magazine O for Oboe.  
CAPCOM Roger, copy.  
SC 5, 6, 7, and 8. Were of the Pensacola area, Tallahasee, Jacksonville, St. John's river to its outlet to the Atlantic.  
CAPCOM Okay, we copy magazine Oboe 6, 7, and 8.  
SC That was 5, 6, 7, and 8.  
CAPCOM Roger, 5, 6, 7, and 8.  
SC Hey Jack, we need a map update.  
CAPCOM Okay, coming up.  
SC Thank you.  
SC By the way, these five windows, almost every darn one of them is looking at something.  
CAPCOM I didn't copy that, Wally, could you repeat?  
SC Roger, these five windows have a view almost all the time. Except the center hatch window is useless for anything.  
CAPCOM Roger, copy.  
SC That would be a (garble) window to have working.  
CAPCOM Roger, we agree.  
CAPCOM Okay, Apollo 7, I have your map update.  
SC Roger, go ahead.  
CAPCOM Okay, for rev 46 the GET of the node is 72 plus 57 plus 26. Longitude 178.7 degrees east right Ascension 05 plus 28  
SC Thank you.  
SC Jack, that reads (garble)  
CAPCOM Say again Apollo 7.  
SC You say it's 58 or (garble) magazine Oboe. We're on Bermuda loud and clear.  
CAPCOM Roger.  
SC The Western Atlantic is pretty well clouded over.  
CAPCOM Okay, copy that.  
SC I would say about 40 miles east of Bermuda there's a long frontal line. It's running on a line

APOLLO 7 COMMENTARY, 10/14/68, GET: 732100 CDT 11:26a

254/2

SC about north and south. The tops are  
rather difficult to estimate that's about all I can see  
at this time.

CAPCOM

Okay, copy.

PAO

This is Apollo Control Houston. Jack  
Swigert is giving Apollo 7 a 1 minute to LOS by Bermuda and  
he gets a Roger back. Let's turn in.

SC

Ready to take a picture.

CAPCOM

Apollo 7, Houston, it appears we got  
85 degrees yaw, do you concur?

PAO

This Apollo Control Houston at 73 hours,  
31 minutes. We'll take the line down now and bring it back  
up at Ascension.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 732900 (CDT: 11:44a) 255/1

PAO This is Apollo Control Houston, 73 hours 39 minutes into the flight. And we are about to acquire through Ascension. Before we do, a word or two more on the upcoming burn presently scheduled for 75 hours and 47 minutes. This will be a perigee adjusting burn, not an apogee; I believe I referred to it as an apogee adjusting burn. It will be a perigee adjustment and it will have the affect of lowering our present perigee which is about 121.5 nautical miles down to 90 nautical miles and the apogee which is presently 159 will remain about the same. But the total effect here is to give us a little bit more margin on our onboard propellant should we have to do a, what we call a hybrid deorbit or in other words, use the small 100 pound thrusters rather than the big service propulsion engine; that's our backup deorbit capability and we have to keep that constantly in mind and keep plenty of margin there to insure that we could do that. Now we have sufficient margin right now but we are going to add to that margin by adjusting the perigee downward about 30 miles and we are doing this some 20 hours of when we had routinely planned to do it, in the flight plan. We are putting a call in now to Apollo 7; here is that communication through Ascension.

CAPCOM We copied that our course aligned.

SC Apollo 7 here, loaded.

CAPCOM Okay, you're going to need to do P51 and 52 again - you go through P51 and then 40 and then P52 - as a reminder it will not be necessary to go to P30 however if you do, you will have to reload the targets. Did you copy that 7? Apollo 7, Houston.

SC Say again.

CAPCOM Did you copy my message about the programs?

SC Say again Jack.

CAPCOM Okay, you'll go to 51 then 40 and then P52 as a reminder it won't be necessary to go to Program 30, if you do you will have to reload the target.

SC Understand.

CAPCOM Okay, real fine. One question on these primary evaporators; did you, did the steam pressure come up to normal? After the serve - reservice?

SC Yes, the reservice burn went (garble)

CAPCOM Okay, copy that. Apollo 7, Houston.

SC Go ahead Houston.

CAPCOM Roger. Would you go increase for 45 seconds on your T pressure control valve switch?

SC Roger; we'll try it again.

CAPCOM Apollo 7, Houston. 30 seconds to LOS for Ascension; we'll pick you up over Tananarive in about 18 minutes. We'd like to watch our reservice over Carnarvon.

SC Roger; (garble) understand on pressure valve.

APOLLO 7 COMMENTARY, 10/14/68, GET: 73:39:00 (CDT: 11:44a) 255/2

CAPCOM

We copy that.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 740246 (CDT 12:13p) 256/1

PAO This is Apollo Control Houston 74  
hours and 02 minutes into the flight. The spacecraft is  
just beginning a swing across the Indian Ocean. We recorded  
this conversation through Tananarive.

CAPCOM Apollo 7, Houston through Tananarive.  
Tananarive M & O, Houston CAPCOM.

TAN This is CAPCOM Tananarive.

CAPCOM Are we going out down there?

TAN Affirmative.

CAPCOM Okay(garble).

CAPCOM Apollo 7, Houston through -

TAN This is CAPCOM Tananarive.

CAPCOM Roger, are we going out down there?

TAN Affirmative.

CAPCOM Okay(garbled)

TAN Okay, that's good, thank you.

CAPCOM Apollo 7, Houston through Tananarive.

SC Okay Houston, do you read me now?

CAPCOM I read you fine now, Wally.

SC (garble)

CAPCOM Roger.

CAPCOM Apollo 7, Houston, 45 seconds LOS.

Tananarive. We will pick you up over Carnarvon in about  
8 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 741120 (CDT 12:16p) 257/1

PAO This is Apollo Control Houston 74 hours 11 minutes into the flight. We've got some contact via Carnarvon and we've also got some good news here on the ground. We watched the primary evaporator - that water boiler which was balky earlier in the flight, then the trouble seemed to go away yesterday, it all settled out, and it kind of kicked up again this morning. Now it's behaving more like it should. Time and again the little troubles that we've had consistently have been in the electrical environment communications area, all of which spells EECOM in the Control Center. That's our name for that particular controller, but from Carnarvon now lets cut over to that conversation.

SC This is Apollo 7.

CAPCOM Apollo 7 read you 5 by.

SC Roger. We just resynchronized our MET OF THE MPC it was running 5 seconds slow. The MET of the LEB was right on.

CAPCOM Okay, copy that. And Wally, we are standing by to watch for your primary evaporator reservice and -- if your ready for it.

SC Jack as your reading it, the steam pressure has come up.

CAPCOM Okay, we copy that now, we see it. The other thing is the burn 3 flight plan activity is of the SCS attitude reference check and the SLA stamping -- SCS SLA stamping we would just like to remind you of those.

SC Roger.

PAO This is Apollo Control here we have a little machine difficulty with our tape device in building 1. It will be fixed momentarily when we switch to another machine. And I'm sure I'll be given the signal when the machine is fixed. We're up and ready now.

CAPCOM Apollo 7, we copied your clock problems. We would like to give you a GET hack 074 plus 12 plus 03 in about 15 seconds.

SC Here we've got a 1665 on the board.

CAPCOM Okay.

SC The water boiler light is on again.

CAPCOM Copy. About that check, due to your water boiler comment, I'll give it to you at 074 plus 13 plus 00.

SC You can take care of the time. I'd rather have that instead. Aren't you reading me on DSKY?

CAPCOM Yes, we have a delay here, Wally, there's 4 3 2 1 mark. 074 plus 13 plus 00. We will read the DSKY but we have a delay here so we're not quite accurate.

SC Might add to that, consideration we're 7/100 of a second off.

APOLLO 7 COMMENTARY, 10/14/68, GET: 741120 (CDT 12:16 p) 257/2

CAPCOM Okay, copy.  
SC Okay, Jack. Did you (garbled)  
CAPCOM Apollo 7 Houston.  
SC Go ahead.  
CAPCOM Do you have any thoughts on why the  
evaporator didn't reservice the time before this?  
SC We gave it five minutes. This time we  
gave it a little bit longer. That makes it a variable.  
CAPCOM Okay, copy.  
SC (garbled) That may not be the answer.  
SC Jack, it came back spontaneously like it  
did once earlier in the flight.  
CAPCOM Roger, we copy that.  
SC That pressure valve, or water control  
valve is frozen closed or something?  
SC It more or less comes back on its own.  
CAPCOM Okay we copy.  
SC When I see it coming back I apparently  
help it along by throwing a little water on it.  
CAPCOM Walt, or Wally, do you think it might be  
a sticky solenoid in the water control valve?  
SC Could be, it's that kind of a trouble.  
CAPCOM Okay.  
CAPCOM Apollo 7 Houston, 1 minute LOS Carnarvon.  
Hawaii in 18 minutes.  
SC That's what we've got here.  
CAPCOM Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 744025 (CDT: 1:46p) 258/1

PAO This is Apollo Control Houston. At 74 hours and 40 minutes into the flight we have acquired Hawaii and here is what is going on.

CAPCOM Apollo 7, Houston through Hawaii.

SC Yes sir.

CAPCOM You are loud and clear. We would like to pass up this WSMR rendezvous radar test data now - before we get all tied up with burn procedures.

SC Okay. We were thinking about that ourselves. (garble)

CAPCOM Okay, let me know when you are ready to copy.

SC Go ahead.

CAPCOM Okay, you are roll attitude will be 349.3 6305.8 yaw 061. Your GET AOS will be 76 plus 23; estimated GET rendezvous radar lock 76 plus 25; there is a remark to rendezvous transponder heater ON, at 76 plus 00.

SC Roger, understand. Altitude 349.3 305.8 061 00. LOS at 76 plus 23, lock on at 76 plus 25; heater on at 76 plus 00.

CAPCOM Roger; that yaw attitude would be better at 060.8.

SC We will get it pretty close to 060 Jack.

CAPCOM Okay.

SC Roger. Do you people have any "druthers" for S band antennas covering these burns?

CAPCOM Okay, stand by; we'll get it to you.

SC Jack, on this slosh test - that's all the more reason to go to (garble) during the burn.

CAPCOM Roger Wally. We copy.

SC Thank you. I'm going down into attitude now. Hey, Jack, is the S4B still up?

CAPCOM Affirmative.

SC I don't know if we ever reported to you; Wally and I observed it visually when it was about 400 miles behind us and it looks as though it's almost in position now.

CAPCOM Okay, stand by. We will give it to you exactly.

SC (garble)

CAPCOM Apollo 7; the S4B appears to be about 700 and some odd miles ahead of you.

SC Roger. AOS -

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 745600 (CDT: 0:01p) 259/1

PAO This is Apollo Control Houston, 74 hours and 56 minutes into the flight. We are in touch with the spacecraft which is almost directly over Houston and here is how that conversation is going.

CAPCOM Huntsville 2 way lock solid range.

SC Apollo.

CAPCOM Go ahead.

SC I think we are passing over Baja, California, again. I took the frame, magazine O (garble) 55 and 56 Hawaiian Islands, 57 and 58 were Baja, California, Gulf of California.

CAPCOM Roger, copy that one. Apollo 7, Houston.

SC Go Houston.

CAPCOM Roger, we would like for you to turn your 02 fans to ON for 3 minutes here.

SC Hey, Jack. Every several hours I've been switching fans like this.

CAPCOM Okay, copy that. Walt, when was the last time you did it on tank 1?

SC On tank 1 - Oh, maybe an hour and a half ago.

CAPCOM Okay, we would like you to do it again here if you would.

SC Done. Jack, I gave you the wrong frame number a while ago. It's 65 and it looks like about 58 and 59 with the Hawaiian Islands and 60, 61, 62 coming across the Gulf Coast of Mexico.

CAPCOM Okay, copy.

SC Houston, Apollo 7.

CAPCOM Go ahead.

SC Did you get the fuel usage on the backup alignment technique?

CAPCOM I'll see if I can get some figures on that for you to pass up.

SC Okay, the fuel we had before. we tried the - before the alignment up here - the fuel we had when we came across the States on the TV pass.

CAPCOM Okay, Apollo 7, Houston. You can turn the 02 tank 1 fan off.

SC Tank 1 fan is off. Is it your wish only to have one running at a time from either of those two busses or do you intend to keep the pump off and put them on for the next (garble).

CAPCOM Okay, Walt. What we're going to do, what we have been doing, is having only one fan on at a time. What we are going to do over Ascension here we want you to turn the fan tank 2 off and then you'll have them both off and after the burn we'll turn the number 2 fan back on.

SC Okay, I got both of them off now. You want number 2 back on?

CAPCOM Roger. Turn number 2 on right now; we'll

APOLLO 7 COMMENTARY, 10/14/68, GET: 745600 (CDT: 1:01p) 259/2

turn it off in at Ascension.

SC Roger. I just took 63 and 64 of magazine "O".

CAPCOM Okay. Apollo 7, Houston.

SC Roger; go.

CAPCOM Roger. On that question about the RCS fuel usage for the period across the States and including the backup alignment we - about all we can accurately predict is about 5 pounds of RCS fuel usage.

SC You had to predict that? You couldn't measure that, huh? (garble) Again, we would like to have an update to our onboard charts now, if you have it, and then one after the burn, please.

CAPCOM Okay, coming up.

SC Jack, while you're at it, I'd like you to consider the chlorination of our water today. It took just about - oh, about 3 (garble) before it started tasting palatable again.

CAPCOM Okay, copy

SC Put chlorine in tomorrow.

CAPCOM Okay, stand by. Apollo 7, are you in auto in the primary evaporator steam pressure?

SC That's affirmative and I see (garble)

CAPCOM Okay.

SC This time I'm not going to try to increase it; just try to turn the water on.

CAPCOM Okay, Apollo 7; we don't want you to do that.

SC Okay. Must be dried out.

CAPCOM Okay, stand by 1

SC Okay, I'm falling (garble) now; attempting (garble)

CAPCOM Okay, we concur on it.

SC It seems to be coming up.

CAPCOM Roger; we copy.

CAPCOM And Walt; we suggest that you leave the back pressure valve closed until after the burn and then we'll think it out; we'll have the answer to Wally's chlorination question after the burn also.

SC Isn't that; we had some pretty bad water; it was pretty disappointing.

CAPCOM Okay copy.

SC I couldn't eat the last part of my last meal yesterday cause I didn't want to put that water in it.

CAPCOM Roger.

SC A lift off agreement was that if it tasted bad, we'd stop; we're just proposing to knock off one day.

CAPCOM Okay, we copy.

SC Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 750600 (CDT 01:11p) 260/1

SC Houston, I've been able to get this up to a normal range so - I suspected a little manipulation of the water flow and just got the motor operating again, that's the way I did it once before.

CAPCOM Roger, copy. And Walt, the figure to update your onboard RCS chart is 800 pounds, 800.

SC Understand 800 now and will be standing by for one after the burn. And what does Quad C have now?

CAPCOM Stand by.

CAPCOM We will pick you up over Ascension in about 6 minutes, Walt.

PAO And at 75 hours 07 minutes into the mission, Apollo 7 goes over the hill from Antigua and as you heard Jack Swigert say, we will pick you up at Ascension in a few minutes. This is Apollo Control in Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 751600 (CDT 1:21p) 261/1

PAO This is Apollo Control Houston, 75 hours, 16 minutes and we have established contact with the crew by Ascension and a most interesting piece of information results from the conversation. Wally Schirra mentioned that Walt Cunningham came up in the line to confirm that in fact they had seen and observed and tracked a star in daylight. I'll say that again that the crew confirms they saw and tracked a star in daylight. Here is the tape of the conversation as we move through the Ascension area.

CAPCOM Apollo 7, Houston. Hello Apollo 7, Houston. Hello Apollo 7, Houston. Hello Apollo 7, Houston.

SC Roger, I'm clear.

CAPCOM Roger, you're not coming in loud and clear, I'll again remind you on the star check that the sextant stars are not visible after 75 plus 35.

SC Roger, we're set up.

CAPCOM And I just wanted to recheck on what the stars look like and also Jack will talk to you now on the ground.

SC Okay, we think we had a star check in daylight, but we're not sure.

CAPCOM Okay.

SC The approximate attitude and I looked for the star and it came in with auto optics. I'm pretty sure it was lined up and I'm pretty sure I was looking at the right star in the daytime using a sextant only.

CAPCOM Okay, real good.

SC Okay.

CAPCOM And Walt, the question you asked on quad C fuel, the readout is 177 lbs. Your omni antenna for the burn will be omni B, Baker, and we would like you to turn the O2 fans in tank 2 to OFF.

SC Tank 2 is off, 177, I assume that's quad C.

CAPCOM Quad C, Charlie.

SC Roger, and I've got a antenna B for the burn.

CAPCOM Apollo 7, Houston. One minute to LOS Ascension. We'll pick you up at Tananarive in 10 minutes.

SC Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 753105 (CDT 01:36p) 262/1

PAO This is Apollo Control Houston 75 hours 31 minutes into the flight. The spacecraft is approaching the Tananarive site and the first call is going out to them.

PAO The SPS burn, burn number 3, is presently programed 17 minutes from now, at 7548. It will be a 9 second burn, 211 feet per second. It will be done with the big engine out of plane. The resulting perigee should be 90 miles with an apogee of 160. The burn itself should take place over Australia, about 3 minutes into the Australian pass. Correct that - well, 3 minutes into the Carnarvon area, actually pass will take it - take the spacecraft northwest of the Australian continent. It will run parallel about 500 miles northwest Australian coast, and then swing up through the island chains through the Pacific.

PAO Well, I think it's unlikely that we will get a conversation via Tananarive, so let me take the line down and wait for Australia. At 75 hours 34 minutes into the flight, this is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY 10/14/68, GET: 754531 (CDT 1:51p) 263/1

PAO This is Apollo Control Houston 75 hours 45 minutes into the flight and we're only a few minutes away from the third burn - major burn - of this flight, a 211 foot per second burn which will be done out of plane with the engine pointed south. The engine pointed south. Jack Swigert is now counting the crew down to mark T minus 2 minutes away from the burn. On the stateside pass this next rev, or this present rev which is rev 48, the radar transponder test between the spacecraft and White Sands Missile Range will be repeated. The rendezvous transponder heater will be turned on a good 10 minutes before the test. That may have had something to do with the lack of data on the run. There was some question as to just when that heater had been turned on in the other elements. This time it's gotten a little more attention, and we're standing by for the burn. Donn Eisele's in the commander's seat. Wally Schirra has moved over to the right couch, and Walt Cunningham is in the center couch. All quite in the spacecraft. Seconds are counted off. 15 seconds, 5, 4, 3, 2, 1, zero. Ignition, and we see thrust, beautiful cutoff, says Cunningham, here is their report.

CAPCOM Apollo 7, Houston through Carnarvon.  
SC Roger.  
CAPCOM I'll give you a time hack at 2 minutes.  
SC Roger, standing by. The FDAI still 5 5.  
CAPCOM Okay, 10 seconds to time hack 6 5 4  
3 2 1 mark. T minus 2 minutes.  
SC Speed normal. Key controllers on.  
CAPCOM One is on  
SC Heat controller on. Limit cycle off.  
CAPCOM Limit cycle off.  
SC Standing by for 30 seconds.  
CAPCOM Roger.  
SC (garble)  
CAPCOM For jetto's in 15 seconds.  
SC Roger.  
CAPCOM 10 9 8 7 6 5 4 3 2 1 zero.  
SC Beautiful cut-off.  
sc (garble) cut it off 1 2 3 and 4.  
SC Did you pick up that SLA stamping jazz?  
CAPCOM Roger, copy.  
SC That's all that we want. Jack, are you  
picking up any residuals?  
CAPCOM Affirmative we copy.  
SC T .3 minus 14.3.  
CAPCOM Copy the Delta V (garble)  
SC Care if I turn my channels off?

SC That will be all.  
SC That's all of it. They're off. They're  
off. (garble) stand by. Locked and all channels are off.  
CAPCOM Roger, copy.  
SC Walt says he is surprised how that thing  
really slaps you.  
CAPCOM Roger, I bet.  
SC Jack, on that SLA stamp we're getting  
absolutely no firings at all. And 4 degree dead band.  
CAPCOM That's what we like to hear.  
SC Yes, that saves a lot of fuel.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 755838 (CDT 02:04p) 264/1

PAO This is Apollo Control Houston 75 hours 58 minutes into the mission. We have acquired through Guam and we have also had a chance to look at some of the data - that burn came exactly as programed, the resulting orbit is 90 miles by 160. The crew was congratulated by CAPCOM Jack Swigert. Here is how the conversation is going as we move through Guam.

CAPCOM Apollo 7, Houston through Guam.

SC Roger.

CAPCOM That was a real good burn, Wally. We confirmed your orbit on radar, 90 by 160.

SC Roger.

CAPCOM And we would like to have your 02 fans tank 2 to AUTO.

SC Done.

CAPCOM Okay and 02 fans tank 1 to OFF, and remain in this configuration until ground cue.

SC Roger, standing by.

CAPCOM Okay. After the WSMR radar test which is coming up, we will be ready to power down and set up housekeeping.

SC Roger.

PAO This is Apollo Control here. It is questionable whether we will get any additional - here comes a call now. They are being given 1 minute to LOS.

SC (garble)

CAPCOM We couldn't copy that, Wally. Say that again.

SC Roger. We have the transponder heater on, we are working into attitude.

CAPCOM Okay, real fine, real fine.

PAO Apollo Control here. Wally says they are getting set up for the transponder run over White Sands again, which is upcoming on this pass. Following that third burn, here are some numbers on the remaining propellant. SPS fuel weight in pounds remaining is 2,874; SPS oxidizer weight in pounds remaining is 4,683 - 4,683 oxidizer, 2,874 fuel. Then you add those together and you have your propellant. In the quads, the reaction control system engines - they read thusly: quad A shows about 175 pounds of propellant, that's a combination number; quad B is 201; quad C is 171; and quad D as in dog is 201. Apollo 7 is being told that an aircraft ARIA 3 is out east - is between the Guam circle and Hawaii. If they have anything to transmit, they can reach us through that aircraft, a KC135, five of which are available for deployment in the specific areas between ships, giving us very extensive tracking coverage.

APOLLO 7 COMMENTARY, 10/14/68, GET: 755838 (CDT 02:04p) 264/2

PAO                      At 76 hours 05 minutes of Apollo 7,  
this is Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 761555 (CDT 2:21p) 265/1

PAO This is Apollo Control Houston, 76 hours,  
15 minutes. Through Hawaii, we are having this conversation.  
CAPCOM Apollo 7, Houston through Hawaii standing  
by. Apollo 7, Houston through Hawaii.

SC Roger.

CAPCOM Read you 5 by Wally. We had a real  
good - close look at the SPS data and it was right down  
the line. Real good operation.

SC Roger, sounds like I got a good engine.

CAPCOM It sure does. Apollo 7, Houston.

SC Roger.

CAPCOM Okay, Wally, on your question on the  
chlorination, you may delete the chlorination for today.  
We'll ask you for some later data on the tapes of your water  
as we go along.

SC Roger, (garble). Very good.

SC Jack.

CAPCOM Alright, go ahead Wally.

SC If there's a power down, I'd like to  
leave one of the blue bags there to check our speed-up rate  
during drifting flight. I'd like to start drifting flight  
with our rate almost to 0 and then we'll see how that  
develops.

CAPCOM Roger, we concur.

SC We heard a report last night that Lunney  
said it looked like we were very stable, but it turned out  
not to be true.

CAPCOM Which one do you plan to leave on, Wally?

SC (garble) lifters, we could get a check on  
this control board, we're another 2 (garble) rate high, SCS  
attitude low.

CAPCOM Roger, we copy.

SC garble. Got to prepare that square for  
the GTO.

SC garble.

SC garble, the command, garble.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 762555 (CDT: 2:31 p) 266/1

SC Roger understand; the reading is coming  
up.  
SC (Garble)  
SC (garble) That's about 1.12 volts. Roger.  
(garble) 145. - 1.50.  
CAPCOM Roger; understand. Solid of 15.  
SC Roger; that's good news. Set on 1.7  
there.  
CAPCOM Roger.  
SC - point is 1.8. 1.7 (garble)  
CAPCOM Roger.  
SC (garble) about 1.4. (garble) feel  
a lot better.  
CAPCOM Okay.  
SC Looks like we beat the Gemini 6.  
CAPCOM Roger.  
SC Still in having LOX 1.5 in through (garble)  
CAPCOM Okay; 1.5.  
SC Just dropped off and she's down. (garble)  
good job. I think I started the other LOX.  
CAPCOM Okay, start the - here.  
SC Okay.  
CAPCOM Okay.  
SC (garble)  
CAPCOM Yeah, you're gonna be cutting across down  
around Mexico City shortly.  
SC (garble)  
CAPCOM Okay, as soon as we find out the data  
Wally; we'll call it back to you.  
SC Okay, I'm sure glad to see you got  
that one.  
CAPCOM Roger. Apollo 7, Houston.  
SC (garble)  
CAPCOM Roger. White Sands said they had locked  
on solid, had good data, they had you at 450 miles for 50  
seconds.  
SC Mexico; you mean they copied it?  
CAPCOM Yeah, right - rate ourselves pretty  
good doesn't it?  
SC Good news.  
CAPCOM Good show  
SC I'm going to get out of this -  
CAPCOM Yuk.  
SC - mode. I can't guarantee (garble)  
TV of the picture.  
CAPCOM (laughter only)  
SC Some kind of small success there.

APOLLO 7 COMMENTARY, 10/14/68, GET: 762555 (CDT: 2:31p) 266/2

CAPCOM The DPO's are looking pretty good.  
SC Roger.  
CAPCOM They sure looked good around SCS burn  
too; that looked bright as the dickens.  
SC (garble)  
CAPCOM Roger.  
SC (garble)  
CAPCOM Roger; we have yaw at 70 degree at this  
time. SC (garble) so we won't worry about that  
at Carnarvon. CAPCOM Roger; I'll give your regards to MIT.  
SC We'll drop another (garble)  
CAPCOM Okay.  
SC Somewhere we're planning to power down here;  
does that jive with your revised?  
CAPCOM That's right; we're going to power down  
shortly. SC Okay, we'll leave the (garble)  
up. CAPCOM Okay.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 765000 (CDT 0253p) 267/1

PAO This is Apollo Control at 76 hours 50 minutes into the mission. At present time the spacecraft is coming up on the Ascension tracking station. Actually, the spacecraft will be passing well south of Ascension, and this will very low elevation pass. We would not expect a great deal of communications to develop between the ground and the crew. However, we will stand by for any conversations that might develop with the crew on this pass and during that previous stateside pass, the crew was given a go-ahead to begin powering down the spacecraft. We just got the call to the spacecraft, CAPCOM Ron Evans will pick up that conversation as it develops.

CAPCOM Apollo 7, Houston. Your waste quantity is now about 77 percent and you have a go to dump at your convenience.

SC Roger. We will probably wait (garble)  
Ron.

CAPCOM Roger.

PAO This is Apollo Control. We have lost signal at Ascension. The next voice station to acquire will be the Tananarive tracking station. During that pass, you heard the ground advise the crew that the waste water tank was approaching 70 percent - 77 percent full mark and that the crew was advised to dump the tank at their convenience. Donn Eisele is scheduled his sleep cycle and as we mentioned before, the spacecraft will be powered down. This will be primarily the guidance and navigation system and the stabilization and control system. These two systems were no longer needed after that very successful SPS burn. Here in Mission Control Center, we are presently going through the change of shift. Flight Director Gene Kranz will be replacing Glenn Lunney on the console and we would like to advise that the best estimate on the change of shift news briefing will be 3:30 pm. That will be in the Building 1 Press Center. At 76 hours 55 minutes into the flight, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 770420 (CDT 3:07p) 268/1

PAO This Apollo Control at 77 hours, 4 minutes into the flight. The spacecraft is just passed over the southern tip of Africa and is moving toward the Tananarive tracking station in the middle of the night side pass. We'll stand by for Cap Com Ron Evans to put in a call into the crew.

CAPCOM Apollo 7, Houston, Tananarive standing by.

SC Roger, go ahead.

CAPCOM Roger.

SC Good afternoon Ron.

CAPCOM Yeh, watched the tail end of your burn there, it looked real good.

SC Perfect.

CAPCOM Apollo 7, Houston. About 1 minute till LOS. We'll have your block data at Hawaii.

PAO This is Mission Control. We've had a loss of signal at Tananarive on that rather quiet pass. The next station to acquire the spacecraft will be the tracking ship Mercury in about 20 minutes. This is Apollo Control at 77 hours 12 minutes into the flight.

END OF TAPE

PAO This is Apollo Control at 77 hours 30 minutes into the flight. The spacecraft has just been acquired by the Mercury tracking ship. However, we've been advised that we probably will not have voice communications on this pass over the Mercury. The ship is having trouble with the antenna used to relay communications via the satellite. Now we do have overlapping coverage on this pass with the tracking station at Guam and we'll be stand by for Cap Com Ron Evans to put in a call to the crew as the spacecraft approaches Guam.

CAPCOM Apollo 7, Houston.

SC Go ahead, Ron.

CAPCOM Roger. I have your block data in number 9 to give you.

SC Ready to copy.

CAPCOM Roger. 051 dash 3-Bravo plus 308 plus 1380. 080 plus 23 plus 36 - 2420 - 052 dash 3-Bravo plus 308 plus 1380. 082 plus 00 plus 15 - 3731. 053 dash 3-Alpha plus 266 plus 1370. 083 plus 36 plus 27 - 4280. 054 dash Alpha-Charlie. Minus 069, minus 0150 - 084 plus 22 plus 07 - 4400.

SC Want us to repeat that?

CAPCOM Negative, output on me. I'll start again with 055 now. 055 dash Alpha-Charlie plus 026 minus 0220. 085 plus 55 plus 07 - 3988. 056 dash Alpha-Charlie plus 118 minus 0300. 087 plus 28 plus 31 - 3674, over.

SC Roger, read that. 051 dash 3-Bravo plus 308 plus 1380. 080 plus 23 plus 36 - 2420. 052 dash 3-Bravo plus 308 plus 1380. 082 to 00, 15 - 3731. 053 3-Alpha plus 266 plus 1370. 083 to 36 to 27 - 4280. 054 Alpha-Charlie minus 0690 minus 0150. 084, 22, 07 - 4400. 055 Alpha-Charlie plus 026 minus 0220. 085, 55, 07 - 3988. 056 Alpha-Charlie plus 118 minus 0300. 087, 28, 31 - 3674, over.

CAPCOM Apollo 7, Houston, you read back correct.

SC Go ahead, Ron.

CAPCOM Apollo 7, Houston, let's check the one on fifty-first rev. The Delta-VC should be 3420.

SC On 051 3-Bravo.

CAPCOM Roger, on 051 3-Bravo.

SC 342 on 51 rev, Roger.

CAPCOM Roger, just about LOS. We would like to start battery B charging over Hawaii after we pick up data.

SC Across.

PAO This is Apollo Control we had loss of signal from Guam. During that pass the ground passed up to

APOLLO 7 COMMENTARY, 10/14/68, GET: 773020(CDT 3:30p) 269/2

spacecraft information which the crew would use for REV 51 through 56 in the event a contingency situation developed requiring re-orbit and spacecraft goes out of touch with ground stations. This is a routine block update which is passed up regularly to the crew. They were also advised to begin recharging battery B. This would be to replace electrical energy removed from that battery during the SPS burn some 2 hours ago. This is Apollo Control at 77 hours 39 minutes into the mission.

END OF TAPE

PAO This is Apollo Control at 78 hours 25 minutes into the flight. We've had a relatively quiet period of time here in the control center since the Press Conference began. The spacecraft completed a pass over the Hawaii, Huntsville, Guaymas. And we have a small amount of conversation with the crew that developed during those passes that we'll play back for you now.

CAPCOM Apollo 7, Houston through Hawaii.

SC Roger.

CAPCOM Roger, we have data you can commence that B charge any time.

SC Roger, commencing now. Is there anything in particular you're observing there for voltage charge.

CAPCOM Okay. Apollo 7, Houston, we just want to look at the voltage and the current. We would also like to get your onboard reading of the current when you start it up.

SC Roger, it's kind of interesting. The charger is showing EC amps at zero.

CAPCOM That is interesting.

SC Wouldn't be defective, is it?

CAPCOM Not quite.

SC Now we're on battery B, it's showing 2.2 amps. (garbled)

CAPCOM I don't want a key hole now, Walt, I can't compare it.

SC Go ahead.

CAPCOM I want a key hole over Hawaii. We can't compare it. We'll pick up data here shortly.

SC Okay. I was pretty sure the volts give way two light amps.

CAPCOM Roger.

CAPCOM Walt, we're showing the 2.18 amps now and 37.4 volts.

HTV Huntsville, two along evaluate range.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston, about 1 minute till LOS.

SC Roger, we can production now on imperial photography.

CAPCOM Roger.

SC We're trying to show just how mobile you can be inside of this thing.

CAPCOM Very good. Walt, for your information there the cut-off on that charge will be .4 amps or amp hours replaced.

APOLLO 7 COMMENTARY, 10/14/68, GET: 782500 (CDT: 4:30p) 270/2

SC I understand sounds like try to get to  
4.4 amps first or look for amp hours, right?

CAPCOM

Roger.

PAO This is Apollo Control. The spacecraft  
is now orbiting out across the South Atlantic toward southern  
tip of the African continent. And we expect acquisition with  
the Tananarive tracking station about 8 or 9 minutes from  
now. This is Apollo Control at 78 hours 30 minutes into the  
flight.

BND OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 784040 (CDT 4:45P) 271/1

PAO This is Apollo Control at 78 hours 41 minutes. Capcom, Ron Evans, has just put in a call to the crew from the Tananarive tracking station and we will stand by for any conversation there.

PAO This is Mission Control. It doesn't appear that we are going to have any conversation with the crew on this pass over Tananarive. Things have been very quiet on this shift since Flight Director Gene Kranz took over. Activities involve mainly with each of the individual flight controllers reviewing the systems he is responsible for on the spacecraft and reporting to the Flight Director. And we might add, that all those systems appear to be functioning very well at this time. This is Apollo Control at 78 hours 45 minutes into the flight. We will pick up next at the tracking ship Mercury.

END OF TAPE

PAO This is Apollo Control at 79 hours 2 minutes. We're coming up now on the tracking ship Mercury. We do expect to have communication with the crew on this pass over the Mercury, and we'll have some overlapping coverage from Guam. We'll stand by as we wait for Cap Com Ron Evans to put in a call to the crew.

CAPCOM Apollo 7, Houston, Mercury.

SC Houston, Apollo 7, do you read?  
Houston, Apollo 7, over.

CAPCOM Apollo 7, Houston. Roger, we read you and we request your battery charger current?

SC That can wait. We had another problem when we left you awhile ago. We could hear you call us over Tananarive, but we couldn't raise you. The SPS burn left a large puddle of water on the aft bulkhead. At first we were very concerned about whether it was water glycol or water we're pretty sure it was replace water. We checked further and discovered that it was underneath the two pad. Since that time we mopped it up using the water hose electrical system. The water came from the coolant lines that we used to use and the water coolant lines and its condensation. We took a follow-up and the small perforator panel to determine how to work the problem. Houston, Apollo.

CAPCOM Roger, we copied part of that I think, Walt. Looks like you've got water on your aft bulkhead and it came from the water coolant line. I'm not sure of your condition at the present time, if it's still coming in or not.

SC It's all mopped up. It's condensate water we're positive. It will probably occur again. We feed a full story on the tape to the dump. Roger, go ahead.

CAPCOM Roger, I understand it's all on the voice tape for the dump also.

SC Right, and the battery charge occurred. I'm showing about .6 amps. Looked to me like it jumped up real fast here and then took a long time on the plateau.

CAPCOM Roger, we concur. We're reading .55 now, Walt.

SC Okay, I'll let you take the EGB posted because I never got below .5 last time and you got down to about .41.

CAPCOM Roger, we understand. We're estimating about 10 hours to get down to .41.

SC Okay, why don't you and the rest of the gang have a drink for us to celebrate Donn and my fifth anniversary in the program today.

CAPCOM Hey, great by golly will do.

SC At this rate I'll be an old man by my  
second flight.  
CAPCOM Walt, we could also use your Service  
Module RCS quantity readings, and then we will correct them  
for you.  
CAPCOM Roger, I'll give to you. We haven't  
been too concerned with onboard read-outs, since we're going  
with your quantities.  
CAPCOM Roger.  
SC The 54 RCS-B is reading - well the same  
as it was. RCS-B is reading 60. (garbled) B is reading 65,  
over.  
CAPCOM Roger, say again Charlie.  
SC Roger, Charlie is reading 60.  
CAPCOM Roger, 54 nothing or 93, and 60 and  
65.  
SC Roger, we have it. I think we'd be  
interested in GS quantities for each of our quad.  
CAPCOM Alright, we'll work it out and send it  
back.  
SC And I don't think we ever got a total  
quantity for our how goes it through A numbers on my RCS profile  
as I carry in my checklist.  
CAPCOM Roger, we're looking up on all that.  
And we've got a status coming up to you. It'll be coming up  
a little later.  
SC We thank you. And we have our own  
estimate of the new Service Module RCS red line. Interesting  
to see what you guys come up with.  
CAPCOM Roger. Wally, you might like to know  
that parties or harnesses become disconnected again. We don't  
read the heart rate down there.  
SC Oh.  
PAO This is Apollo Control. The spacecraft  
has apparently gone over the horizon from the tracking ship  
Mercury, and we never did acquire from the Guam station. As  
you heard Astronaut Walt Cunningham reported to the ground  
what he characterized as a minor problem. He reported a  
puddle of water had collected on the spacecraft aft bulkhead.  
He said it had apparently had condensed off the relatively  
cool environmental control water coolant lines and had condensed  
out into the form of a puddle. And they reported that they  
mopped it up. Cunningham also as you heard reported that  
today is the fifth anniversary for himself and Astronaut Donn  
Eisele with the space program. We'll next acquire the space-  
craft perhaps at hawaii. That will be a very low elevation

APOLLO 7 COMMENTARY, 10/14/68, GET: 790140 (CDT 5:05p) 272/3

pass if we acquire at all as the spacecraft moves south of the Hawaiian Islands and then move down over the tracking ship Redstone. This is Apollo Control at 79 hours 11 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 792000 (CDT 5:25p) 273/1

PAO This is Apollo control at 79 hours 20 minutes, the spacecraft will be acquired by Hawaii shortly, and we'll stand by for any conversations that develop with the crew on this pass.

CAPCOM Apollo 7, Houston, opposite OMNI.  
CAPCOM Apollo 7, Houston.  
SC Roger, opposite OMNI.  
CAPCOM Roger, Walt we'd like to request O2 tank one fans on for about five minutes now, then off.  
SC Roger, tank one fans on.  
CAPCOM If you get a chance, look down on the ground there you might be able to see a big fire.  
SC Where at?  
CAPCOM You may not see it tell the next pass, it's over in Hawaii.  
SC Roger.  
SC You say that big fire is to the west?  
CAPCOM Yea, that's affirmative, we'll try to give you some pointing data for the next pass over.  
SC Thank you.  
CAPCOM Huntsville two way log, down link weak, to weak for valid range.  
CAPCOM Huntsville two way log, valid range.  
SC Houston, Apollo 7.  
CAPCOM Houston go.  
SC Roger, we also just discovered water coming out of our blue hoses, at least the one in the center couch, I haven't checked the other three yet, but we've got quite a bit of visible moisture flowing out of it.  
CAPCOM Roger, coming out of the blue O2 hose, is that what you said?  
SC Affirmative, and we've temporarily turned off the temperature pressure so we could clean up - clean it up.  
CAPCOM Roger.  
SC I know there's going to be a problem here, I only wish it was a problem.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 793000 (CDT 5:35P) 274/1

HTV Huntsville LOS.

PAO Well, we have had loss of signal. Now from the Huntsville. You heard the crew advise that they have water coming out one of the oxygen hoses and have turned off the suit compressor which apparently has stopped the flow and is allowing them to clean it up. We have no further evaluation at this time. Flight Director Gene Kranz is discussing the situation with the flight controllers. It doesn't appear to be a serious problem, however, at this point. Our next pass will be over the Tananarive tracking station. We are scheduled to acquire there at 80 hours 12 minutes and we will pick up the pass at that point. This is Apollo Control at 79 hours 33 minutes into the flight.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 793730 (CDT 5:40p) 275/1

PAO This is Apollo Control, 79 hours 37 minutes. We have a few more details on the situation which Walt Cunningham reported to the ground a short while ago concerning water coming from one of the oxygen hoses, and forming a puddle on the floor of the spacecraft. Apparently this is the same nature of problem as we noted a short while earlier, and that is moisture in the cabin condensing off cool surfaces and forming puddles on the floor. The primary concern is the inconvenience it causes the crew rather than any significant problems with the spacecraft, itself. We do have a humidity survey coming up on the flight plan shortly, and this would give some indication of what the humidity is in the cabin. However, flight director, Gene Kranz, advises that the humidity in the cabin has been running well within the comfort level and apparently the condensation is a process that occurs when moisture, which is naturally in the air and the atmosphere of the cabin, comes in contact with exposed cool surfaces. We will continue to follow the situation and advise if any further developments relevant to it occur. This is Apollo Control at 79 hours 39 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 801330 (CDT 6:15P) 276/1

PAO This is Apollo Control at 80 hours 14 minutes. The spacecraft is about to come into range of the Tananarive tracking station and we will pick up any conversations that come out of this pass over Tananarive.

CAPCOM Apollo 7, Houston. (Pause) Apollo 7, Houston through Tananarive.

SC Roger, we can slide by one.

CAPCOM Roger. We sure could use your battery manifold pressure - systems test 4A.

SC We read the temperature about a half an hour ago when we used it to dump something and it stayed 1.4 until you opened the vent and when you opened the vent it reads about point five.

CAPCOM Roger.

SC Read? Did you read that, Ron?

CAPCOM Apollo 7, Houston. Roger, read one point four and zero point five when you opened the vent.

SC Roger, and we checked our lithium hydroxide canisters. They are dry. We have checked the suit circuit water (garbled) and it's functioning in auto 1 and auto 2. It's remaining in auto 2.

CAPCOM Roger. Have you come to any specific point in the malfunction procedures?

SC Not yet.

CAPCOM Apollo 7, Houston. (Pause) Apollo 7, Houston.

SC Go.

CAPCOM Roger. Looks like our battery is charging current decreasing a little faster than predicted and we would like your onboard reading.

SC Roger. I am reading point 5 amps.

CAPCOM Roger. Point 5. We will keep you advised on it. Walt, that volcano should be about 30 degrees down and 20 degrees left of local vertical at 80 plus 57.

SC 80 plus 57 and 30 degrees down and 20 degrees left.

CAPCOM Roger. Local--

SC Garbled

CAPCOM Roger, 30 degrees left, 20 down and 30 left. Now belay that. 30 degrees down and 20 left of local vertical.

SC 30 down and 20 left and 80 hours 57 minutes.

CAPCOM Affirmative. (Pause) Apollo 7, Houston.

APOLLO 7 COMMENTARY, 10/14/68, GET: 801330 (CDT 6:15P) 276/2

CAPCOM                    One minute LOS. Mercury at 35.  
SC                         Roger, Mercury 35.  
PAO                        We have had loss of signal now from  
Tananarive. The next station to acquire the spacecraft will  
be the tracking ship Mercury and we expect acquisition there  
in about 16 minutes. This is Apollo Control at 80 hours  
21 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 803630 (CDT 6:40p) 277/1

PAO This is Apollo Control, at 80 hours 36 minutes. The spacecraft will be coming within range of the tracking ship Mercury, and we're standing by for a call from CAPCOM Ron Evans to the crew.

CAPCOM Roger, I'll have flight plan update for you in 1 minute.

SC (Garble)

CAPCOM Roger. 82 plus 00; fuel cell oxygen purge.

SC Roger, we read you, Ron.

CAPCOM Roger.

SC (Garble) occurring at volcano 805?

CAPCOM Roger, volcano time 80 plus 57.

SC Roger

CAPCOM Apollo 7, Houston. Based on the trend, it looks like we'll terminate that B charge, probably over Hawaii.

SC Roger.

SC We are still getting water out of our three hoses.

CAPCOM Roger, I understand.

CAPCOM Wally, is there anyway you can maybe give us an estimate of how much water is coming out there?

SC Ron, the first time we (garble) out of there, about a spoonful from the center one, and we were getting about 6 teaspoonfuls - we're getting about half of that out of the left one and just a little moisture out of the right one.

CAPCOM Roger, copy.

CAPCOM Apollo 7, Houston. While we're at it, any estimate on the quantity that was on the bulkhead.

SC Yeah, plenty. Quite a large amount.

CAPCOM Yeah, I'd say so.

CAPCOM Apollo 7, Houston. Request biomed to position three.

SC Roger.

CAPCOM 30 seconds LOS, Hawaii at 53.

SC Hawaii 53. What Islands are we going by?

CAPCOM Roger, be going south of the Big Islands.

SC Roger.

PAO This is Mission Control. We've had loss of signal now from the Mercury. You heard Wally Schirra, again mention the problem with moisture coming from the oxygen hoses from the suit supply. The initial assessment on that moisture from Cunningham was that it was condensate, and the feeling here in Mission Control Center is that it does represent condensation rather than any leak from the spacecraft. The crew was advised that they will be in good

APOLLO 7 COMMENTARY, 10/14/68, GET: 803630 (CDT 6:40p) 277/2

PAO                    position to view the volcano erupting  
on Hawaii. Now that is the volcano Kilauea and I don't vouch  
for that pronunciation. They will be coming up within - uh  
within range of the volcano approximately 80 hours 57 minutes  
elapsed time and it's predicted they will have a clear view  
of the area. This is Apollo Control at 80 hours 45 minutes.  
END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 805430 (CDT 7:00p) 278/1

PAO This is Apollo control, 80 hours 54 minutes, we've just acquired the spacecraft from Hawaii and we'll stand by for any comments from the crew or conversation on this pass.

CAPCOM Apollo 7, Houston, Hawaii, via S-band.  
CAPCOM Apollo 7, Houston. Hawaii M&O VHF for

a bit.

CAPCOM Apollo 7, Houston.

SC Roger.

CAPCOM Roger, S-band volume up.

SC Roger, on S-band.

CAPCOM Roger, Hawaii of M&O VHF off now.

CAPCOM We're standing by this pass.

CAPCOM Apollo 7, Houston, I recommend terminate battery charging on B.

SC Roger, terminate. I'd like to get a report from you on how much we have in B if you get a chance and also A.

CAPCOM Welco.

SC Roger, we got a good sweep down the entire chain. The big island itself is pretty well clobbered with clouds and you don't actually see Kilauea.

CAPCOM Rog, that's a heck of a note.

SC It's the clearest we've ever seen it out here over Hawaii though, we got very nice pictures of the entire chain, we took them, but we don't know how good they are.

CAPCOM Roger.

CAPCOM Apollo 7, Houston, 30 seconds LOS, Mercury at 82 plus 10.

SC Roger, Mercury at 82 plus 10.

SC Houston, this is Apollo 7.

CAPCOM Go.

SC Houston from Apollo 7.

CAPCOM Say again.

SC garble.

CAPCOM Go.

PAO We have lose of signal now, from Hawaii. The crew advised on that pass that they were not able to observe Kilauea, which is erupting at this time. They said they did get a good view of the entire Hawaiian chain however and reported that weather in that area was unusually clear although the main island of Hawaii was apparently clouded over, blocking their view of the volcano there. We have a very long pass - dry period now before we come upon another station with voice communication, that will be the tracking ship Mercury almost a full rev from Hawaii here, we'll acquire Mercury at 82 hours and 10 minutes

APOLLO 7 COMMENTARY, 10/14/68, GET: 805430 (CDT 7:00p) 278/2

PAO ground elapsed time. This is one of the quietest passes during a - the days operations when the spacecraft is passing down over the southern part of the western hemisphere and missing a large part of the ground stations. At 81 hours 2 minutes, this is Apollo control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 813930 (CDT 7:40P) 279/1

PAO This is Apollo Control at 81 hours 39 minutes. At present time the spacecraft is approaching the southwestern coast of Africa, on what will be one of the revolutions with the smallest number of contacts with ground stations during the day. We will go from the station at Hawaii all the way back around the tracking ship Mercury off between Japan and the Phillipine Islands in the Pacific Ocean before we expect to acquire again. We will be passing north of the Tananarive station, but I do not expect that we will be within range to acquire at that station. At the present time the plotboards here in the Control Center show the S-IVB the second stage of the launch vehicle to be leading the command service module by approximately 1200 miles. The S-IVB at last report was in orbit 116 nautical miles by 147 nautical miles as compares with the orbit for the command and service module of 160 by 90 nautical miles. We will be acquiring the tracking ship Mercury at an elapsed time of 82 hours 10 minutes and we will be following the progress of events here in Mission Control Center until that time. At which time we will come up to follow any conversations between flight controllers here in the Center and the spacecraft. This is Mission Control at 81 hours 41 minutes.

END OF TAPE

PAO This is Apollo Control, 82 hours 11 minutes into the flight. The spacecraft at the present time is approaching the tracking ship Mercury. Coming up near the end of a revolution which has had various force ground coverage. Our last station to be in touch with the spacecraft was the tracking station at Hawaii, and we are preparing now to put in a call to the crew from CAPCOM - our CAPCOM, Ron Evans, here in the control center. We'll stand by for any conversation that develops with the crew over the tracking ship Mercury.

CAPCOM Apollo 7, Houston through Mercury.  
SC Roger -(garble)  
CAPCOM Roger, loud and clear.  
SC We just left Hawaii.  
SC I ended up with a fouled switch in the number 2 hand controller in pitch down. We discovered it in acceleration command. I will troubleshoot it when we get the computer back on the line after we power up.  
CAPCOM Roger, a lot of static, Wally, say it again.  
SC Okay, over Hawaii just as we went by the Big Islands, the number 2 hand controller fouled in the pitch-down direction. It accel command and pulsed.  
CAPCOM Roger, copy.  
SC I only got one pulse in pitch down, but I got (garble) pitch down command and accel command. I got to trying to trouble shoot that. We'll try it in rate command. So I will troubleshoot that in the computer bulb when we power up.  
CAPCOM Roger.  
SC Say, Ron, do you plan to give us a map update?  
CAPCOM Roger, stand by. I'll get you one.  
SC Okay, and have the doctors done any talking down there about the possibility of one or all of us having a cold and stopped up ears from reentry.  
CAPCOM Rog. They've been thinking about it and they will advise.  
SC Okay, we've got something onboard here in a medical kit called antibiotic. I was wondering if we ought to be taking it, or what? So far, Wally's, I guess, about holding his own on his ears. Donn may be getting a little bit worse and I think my ears are still clearing up fairly well.  
CAPCOM Roger. I think before antibiotics, they're concerned about temperature. Or do you have a temperature, you know, before you go into the antibiotics.  
SC I believe I'll start wearing the oral

SC thermometer a little bit and see where  
I stand, just for the experience.

CAPCOM Roger.

CAPCOM 7, Houston.

SC Go ahead.

CAPCOM Rog. We'd like you to proceed, with the  
waste water dump.

SC Roger. We read 80 percent. What do  
you show?

CAPCOM Rog. We read 82.9.

SC Rog. We'll dump all waste after we LOS.

CAPCOM Roger. And any further water problems  
out of the water hoses, there, or any results of the humidity  
survey?

SC We haven't had any more water coming out  
the hoses for about the last 40 minutes and we're pretty cer-  
tain that when the water tank is full, water begins to con-  
dense out.

CAPCOM Roger.

SC (Garble) the last water we got out of  
here.

SC Rog. Our last humidity reading. Are  
you ready to copy?

CAPCOM Roger.

SC At Wally's suit in the hose, (Garble)  
wet and dry 540-66. The unit to the cabin heat exchanger  
58-68. At the condensate (Garble) we have a (garble) of 52.  
The wet ball for the area was 58. The dry ball for the area  
was 73. Over by the right-hand window we had 68-72, over.

CAPCOM Roger, we copy.

CAPCOM 7, I have your map update.

SC Roger.

CAPCOM Rev 52, GET node, 81 plus 52 plus 02,  
longitude 42.4 east right ascension, 05 plus 19.

SC Roger.

PAO This is Mission Control. We've had loss  
of signal now, from the Mercury. During that pass Walter  
Cunningham reported that they had a failed switch in the  
number 2 hand controller. This is one of two controllers  
used to control spacecraft attitudes, and he reported that  
they would plan to troubleshoot this the next time they have  
the computer back up on the line. The computer, at the present  
time, has been powered down. It was powered down after that  
SPS burn this afternoon. They also reported on the condition  
of the crew. As far as nasal congestion and physical condi-  
tion is concerned, he reported that Commander Wally Schirra,  
appeared to be holding his own, and that Donn Eisele was per-  
haps getting somewhat worse. He did not copy his comments  
in regard to his own condition. Flight surgeon requested

APOLLO 7 COMMENTARY, 10/14/68, GET: 821030 (CDT 815p) 280/3

PAO that the crew attempt to obtain temperature readings, and we would perhaps expect to see that information coming up on subsequent passes. We'll next be acquiring the tracking ship Redstone in the South Pacific. That acquisition is scheduled to occur at about 82 hours 42 minutes ground elapsed time and there's also a possibility of a very low angle acquisition as we pass Hawaii going off the - south of the Hawaiian Islands. Now we will be passing that point at 82 hours 29 minutes ground elapsed time, or about 10 minutes from now. This is Apollo Control at 82 hours 19 minutes into the flight.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 823300 (CDT: 8:40p) 281/1

PAO This is Apollo Control 82 hours  
33 minutes into the flight. Now we've just had a brief  
acquisition from the Hawaiian tracking station. And we'll  
play back the tapes of the air-to-ground communications from  
that passing in their entirety now.

CAPCOM Apollo 7, Houston, Hawaii stand by.

SC (garbled)

CAPCOM Apollo 7, Houston, you're real weak.

SC Roger, read you loud and clear.

CAPCOM Roger.

SC (cut off) adjust our sleep cycle here

this 5 and a half hours is not too appealing with burn 3  
already out of the way.

CAPCOM Roger.

SC We would like to add an hour and a  
half to each of our sleep cycles.

CAPCOM Go. May I copy that Wally.

SC Okay, that will give us each 7 hours  
so we'll stay on watch for an hour and a half here, and  
sack it out with Donn tomorrow or later.

CAPCOM Okay.

SC Very good. What we'll do is just add  
an hour and a half to each of our sleeping schedules.

CAPCOM So far it looks good down here.

SC Roger.

PAO And that's LOS, loss of signal from  
the Hawaiian pass. The next station to acquire is the  
tracking ship Redstone and we'll be picking them up in just  
about 8 minutes from now. This is Apollo Control at 82 hours  
35 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 824250(CDT 8:45 p) 282/1

PAO This is Apollo control at 82 hours 43 minutes and we've just put in a call to the crew, here's that conversation now.

CAPCOM Roger, we had it just about all fixed and then you guys used some over Hawaii.

SC Sorry about that.

CAPCOM It's all right.

CAPCOM Apollo 7, Houston, opposite OMNI.

CAPCOM Apollo 7, garble.

SC Why don't you see if Jack can pass us up a Lima Sierra update tomorrow afternoon sometime.

CAPCOM Say again, Walt.

SC Why don't you see if Jack can pass us up a Lima Sierra update tomorrow afternoon sometime.

CAPCOM Welco.

SC It's completely dry underneath the suit bag at this time.

CAPCOM Rog, that's good to hear that. I was a little curious of how it stayed in one place down there.

SC garble.

CAPCOM Missed that. Ascension at 08.

SC garble.

CAPCOM Rog, I understand.

SC garble.

PAO This is mission control, the spacecraft is now gone over the horizon and out of range of the tracking ship Redstone, the next station to acquire will be the station at Ascension and we'll be coming up there in about 19 minutes from now at 82 hours 51 minutes into the mission this is Apollo control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 890900 (CDT 9:12p) 283/1

PAO This is Apollo Control, 83 hours and 9 minutes into the flight. At the present time we are coming up on the tracking station at Ascension and we'll stand by as Ron Evans puts in a call to the crew.

CAPCOM Apollo 7 Houston through Ascension.

SC Roger, loud and clear

CAPCOM Roger, I have some data for you, if you are ready to copy.

SC Go ahead

CAPCOM Roger, your total usable service module RCS fuel is quad A, 48 percent, Bravo 57 percent, Charlie 48 percent, and Delta 57 percent.

SC What does that all total up to in pounds Ron, do you have that?

CAPCOM Roger, for your chart up date its 687 pounds at 83 hours. I have your new red lines if you'd like those totals also.

SC Forty eight percent usable, I'm not sure that I know how much I have in that quad that's usable.

CAPCOM Walt, say that again.

SC (garbled) we also have to switch and I don't think its 48 percent usable its (garble) percent.

CAPCOM Apollo 7, Houston, are you saying when to switch to secondary?

SC We have switched to secondary at 43 percent and I need to know an absolute percent in the quad, not a percent usable if you have it.

CAPCOM Roger, we'll get it for you.

SC And the number for the chart you said was 683?

CAPCOM 687.

SC 687, thank you.

CAPCOM And I have your battery total.

SC Go ahead with the battery.

CAPCOM Roger, Bat A 33.2, Bat B 30.8, Bat C 39.5.

SC Rog, you're giving a low, low there, I hope you are still considering with the charts sometime around six or so.

CAPCOM Rog, Walt, we're still evaluating this, we're working very closely with the manufacturer and we should have some information probably sometime tomorrow.

SC Roger, thank you

CAPCOM And be advised the voice quality of the DFE is still good.

SC Roger, understand, thank you. Were you giving me usable or a number to go on my chart when you gave me the chart update?

APOLLO 7 COMMENTARY, 10/14/68, GET: 890900 (CDT 9:12p) 283/2

CAPCOM The chart up date is what you're going to chart with in the poundage, the percentage was the total usable, as calculated on the ground, not a correction factor for your gauges.

SC Roger, our chart includes 58 pounds unusable. Do we add that to the number you gave or did you give us the number of the ordinate there?

CAPCOM The number for the ordinate. Apollo 7 Houston, we're reading about 84 percent on the waste water to quantity, just about LOS now.

SC Roger, we are going to commence something in five minutes.

CAPCOM Roger. We will pick you up at Mercury at 44.

SC

(garbled)

CAPCOM

Say again, what?

SC

The last number we had was 808, looks like somewhere I missed 20 pounds, less than 4.3.

CAPCOM

Roger, I understand

PAO

This is Mission Control, we've had loss of signal now from Ascension, the next station to acquire will be the tracking ship Mercury and we will be picking up the spacecraft there in about 29 or 30 minutes from now. This is Apollo Control at 83 hours and 16 minutes into the flight.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 834440 (CDT 9:50p) 284/1

PAO This is Apollo Control. The Apollo 7 spacecraft is now 83 hours 45 minutes into its mission. We're coming up on the tracking ship Mercury about midway through a day side pass. Astronaut Donn Eisele is nearing the end of a seven hour sleep period at 84 hours ground elapsed time. The Commander, Wally Schirra, and Lunar Module Pilot, Walt Cunningham are scheduled to begin their sleep period. We'll stand by now as Cap Com Ron Evans puts in a call to the crew. We'll have overlapping coverage here from Mercury on through the tracking station on Guam.

CAPCOM Apollo 7, Houston, Mercury standing by.  
CAPCOM Apollo 7, Houston through Mercury  
standing by.

SC Roger, we read you loud and clear.  
CAPCOM Roger, same here.  
PAO This is Apollo Control. Now we've had a very quiet pass till now, but we will continue to monitor through Guam.

CAPCOM Apollo 7, Houston, 1 minute till LOS.  
Redstone at 15.

SC Roger, we're just breaking down now  
for the sleeping period. Wally and I are going off here.

CAPCOM Roger.  
SC (garbled)  
CAPCOM Say again, Walt.  
SC I was just repeating we get off here.  
PAO We've had loss of signal now with the spacecraft. Due to pick up again at the tracking ship Redstone in about 20 minutes. This is Apollo Control at 83 hours 56 minutes.

END OF TAPE

PAO This is Apollo Control at 84 hours  
16 minutes. The spacecraft has just gone into a night-side  
pass and is coming up on the tracking ship Redstone. We'll  
standby here for a call to the crew from the CAPCOM Ron  
Evans.

CAPCOM Apollo 7, Houston through Redstone.  
CAPCOM Apollo 7, Redstone standing by.  
SC Read you Ron.  
CAPCOM Hey, good morning.  
SC How are you?  
CAPCOM Getting along great, yourself?  
SC Oh just fine, I just got up and had  
a good nights rest. Wally and Walt are sacking out now.  
CAPCOM Hey, good.  
CAPCOM Apollo 7, Houston.  
SC Go Ron.  
CAPCOM Roger, I want to cycle the O2 tank 1  
fans at this time. Turn them on and -- for five minutes and  
then off.  
SC Roger, I've got one on at the moment  
two are off. You want me to turn two on for a bit?  
CAPCOM Negative. We thought O2 tank 2 was in  
auto, and O2 tank 1 fan was off. We would like to turn on  
tank 1 fan at this time.  
SC Okay, but it's just the other way around.  
CAPCOM Okay, stand by then.  
CAPCOM Okay, Donn, let's go ahead and cycle  
2 fans on for five minutes and then off.  
SC Roger. We've got a couple of reports  
for you.  
CAPCOM Roger, go.  
SC Roger, we had canister change number 7,  
at around 8230, and believed Wally and Walt checked the  
Command Module RCS temperatures at around 83 hours and they  
were all five volts. All except 6A and that was 4.9.  
CAPCOM Rog, copy.  
SC Ron, we have a number of 687 pounds RCS  
Now is that total or is that just usable?  
CAPCOM Donn, that is usable propellant.  
SC Okay, so I can add for our chart up  
here I can add to 58 pounds then we have included in it?  
CAPCOM That's affirmative.  
SC Roger, in the future when you give us  
the totals would you please have the unusable added in because  
that's what we plotting on this little card we've got.  
CAPCOM Roger, you want the ordinate when I give  
you the data. Is that correct?  
SC Roger.

SC That makes us feel better we wondered  
what happened to all the fuel all of a sudden.  
CAPCOM Okay.  
CAPCOM Donn, I want to make sure you save three  
decongestants for use prior to reentry.  
SC Roger, we got you on that.  
CAPCOM Roger.  
CAPCOM I've got about 1 minute to LOS Donn.  
SC Roger, say it.  
CAPCOM You might be interested to know that  
the little TV yesterday morning was much much better than  
any ground testing I had ever seen.  
SC Is that right? Boy that's great. Did  
you see it on the commercial?  
CAPCOM Affirmative, and it was really great.  
SC That's dandy.  
PAO We've had loss of signal now at the  
Redstone. As you heard astronaut Donn Eisele has just gotten  
up from his 7 hour sleep period. And reported that he had  
a good nights sleep, but Wally Schirra and Walt Cunningham  
are now sacked out as he put it, beginning their 7 hour  
sleep period. They're schedule to sleep from 84 hours to  
91 hours. The next station to acquire the spacecraft will be  
Ascension as we come up on the start of the 54 revolution  
at 84 hours 25 minutes this is Apollo Control

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET 844130 (CDT 10:45 p) 286/1

PAO This is Apollo control at 84 hours 42 minutes into the mission we're coming up now on the Ascension tracking station, just at the beginning - at the end rather of a night side pass we'll be coming out at the spacecraft, we'll be coming out into daylight, probably before the Ascension pass is completed. During this pass we're scheduled, according to the flight plan to get an update to the onboard contingency landing information, this is information that is routinely passed up to the crew several revolutions ahead and would give them the necessary information should - should a deorbit become necessary while they were out of communications with one of the ground tracking stations. We'll stand by now for any conversation with the crew over the Ascension station.

CAPCOM Ascension standing by.

CAPCOM Apollo 7, Houston, opposite OMNI.

SC Roger.

CAPCOM Apollo 7, Houston, one minute LOS,

Mercury at 18.

SC Roger.

PAO We've had lose of signal now, with the spacecraft, from the Ascension tracking station, a very quiet pass there, we heard from Donn Eisele I think twice, once at the beginning acknowledging the Capcoms initial acquisition report and then Roger at the end as we were about to lose was lock with the spacecraft. Here in mission control center we're in the midst of changing shifts. Flight director Jerry Griffin will be coming on replacing flight director Gene Kranz and we're looking toward a change of shift press briefing at the present time to occur at approximately eleven thirty. At 84 hours 52 minutes into the mission this is Apollo control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 851800 (CDT 11:20) 287/1

PAO This is Apollo Control, 85 hours, 18 minutes, 25 seconds into the mission of Apollo 7. We are coming upon the acquisition point for the Mercury Tracking Ship this time. Let's standby for any conversation.

CAPCOM Apollo 7, Houston.

SC Houston, Apollo 7.

CAPCOM Roger, Apollo 7, Houston, acquisition Mercury. I would like to brief you on a USB test. It involves a couple of switches.

SC Okay, go ahead.

CAPCOM Right. Just about time LOS Mercury, we would like power TMP to OFF. And the S-Band volume for that Guam pass. And this will be at about - 25 minutes, T-5 hours and 25 minutes.

SC Okay, will do. Power PMP to OX AND S-Band volume for pass.

CAPCOM Right and if the test doesn't work out, I will try and come back on VHF. Otherwise, at LOS Guam, you can put the power PMP back to normal.

SC Roger, understand.

CAPCOM Right. Apollo 7, we would like power PMP to OX, anytime now.

SC Roger. Houston, Apollo 7.

CAPCOM Go.

SC Roger. Would you confirm the H2 fuel cells purge that are in the flight plan?

CAPCOM Standby. Apollo 7, Houston, negative. We are updating that real time. You can disregard that entry.

SC Roger. That is why the Apollo heaters are off. I've got a couple of reports I would like to make.

CAPCOM Go.

SC Okay. When Wally went to sleep, it was about 84 hours, He took two aspirins and twenty clicks of water. And when I went to asleep about 77 hours, I took two aspirins and right to bed and twenty clicks of water.

CAPCOM Roger, understand. Wally at 84 hours, two aspirins and twenty clicks. Don, at 77 hours, two aspirins and one actified and twenty clicks.

SC That is right.

CAPCOM Thank you. Apollo 7, Houston, I'll have a block data at Redstone.

SC Roger, understand, block data at redstone.

CAPCOM Right. Apollo 7, Houston, 1 minute LOS GUAM, Redstone at 50.

SC Roger, understand.

APOLLO 7 COMMENTARY, 10/14/68, GET: 851800 (CDT 11:20 287/2

PAO This is Apollo Control, 85 hours, 30 minutes into the mission of Apollo 7. We have just lost acquisition with Guam Tracking Station. We are anticipating acquisition at the Redstone Tracking Ship at 85 hours, 50 minutes. During that pass, it was indicated by astronaut Eisele that the spacecraft commander Schirra and the LMP pilot, Cunningham entered a sleep period 84 hours into the mission. Schirra took two aspirins and twenty clicks of water and Eisele in his sleep period took before his sleep period took two aspirins, one actifed, and twenty clicks of water. At 85 hours, 31 minutes into the mission, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 86 hours,  
48 minutes into the mission of Apollo 7. We have - a tape  
of our Redstone pass which occurred at 8550 and following  
that just a very short tape at Ascension Islands, started  
at 8617. We will roll those now.

CAPCOM Apollo 7, Houston.  
SC Houston, Apollo 7, GO.  
CAPCOM Roger, I have a block data when you are  
ready to copy.

SC 'Go ahead, Bill.  
CAPCOM Roger. Before I start, we would like to  
confirm the PMP power back to normal.

SC Power is normal.  
CAPCOM Okay, block data.  
SC Starting to read.  
CAPCOM 057-2 Alpha, plus 242, minus 0270,  
08 niner, 0620, 3382, 58-1 Charlie, plus 200, minus 0600,  
0 niner 0, 30, 41, 3332, 05 niner-1 Alpha, plus 270,  
minus 0640, 0 niner 2, 0654, 334 niner, 060-1 Alpha,  
plus 310, minus 0644, 0 niner 3432 niner, 340 niner,  
061-1 Alpha, plus 306, minus 0645, 0 niner 5, 2000, 365 niner,  
062-1 Alpha, plus 254, minus 0640, 0 niner 6, 5238, 2888.  
Read back, please.

SC Roger. 57-2 Alpha, plus 242, minus 0270,  
089, 0620, 3382, 058-1 Charlie, plus 200, minus 0600,  
090, 3041, 3332, 059-1 Alpha, plus 270, minus 0640, 092,  
0654, 3349, 060-1 Alpha, plus 310, minus 0644, 0934329,  
3409, 061-1 Alpha, plus 306, minus 0645, 095, 2000, 3659,  
062-1 Alpha, plus 254, minus 0640, 096, 5238, 2888.

CAPCOM Readback is correct.  
SC Roger.  
CAPCOM Apollo 7, Houston. We are still showing  
real time on SM and - would you check PMP power normal  
again?

SC Roger, I got it now.  
CAPCOM Right. Apollo 7, Houston, 1 minute LOS  
Redstone, sinking at 17.

SC Roger, Houston.  
CAPCOM Apollo 7, Houston, acquisition sinking,  
standing by. Apollo 7, Houston, acquisition sinking, stand-  
ing by.

SC Roger. You're very better, Houston.  
CAPCOM Roger, understand. Apollo 7, Houston,  
coming upon LOS Mercury at 53.

PAO This is Apollo Control, 86 hours,  
53 minutes into the mission. We're coming upon the Mercury  
Tracking Ship for a live pass. Let's standby.  
CAPCOM Apollo 7, Houston, acquisition Mercury,  
standing by.

APOLLO 7 COMMENTARY, 10/15/68, GET: 864800 (CDT 12:50) 288/2

SC Roger, Houston, Apollo 7. Bill, could you get me the static vent update for our orbital map.

CAPCOM Standby. Apollo 7, Houston. The GET for the node crossing is 84 plus 49 plus 48.

SC Roger, understand, 84 plus 49 plus 48.

CAPCOM Right. And it will be 3.1 west.

SC Roger, thank you.

CAPCOM And it is REV 54.

SC Roger that.

CAPCOM Okay.

PAO This is Apollo Control, 86 hours, 58 minutes into the mission. We will acquire Guam at 865941. This gives us another minute and that will be a very short pass of some 3 minutes. One point of interest is the television for tomorrow will be in the sixtieth revolution at 95 hours, 25 minutes, 55 seconds, ground elapsed time. That is 92840, central daylight time, roughly 29 minutes after 9 in the morning. Let's standby for any possible conversation on this Guam pass.

CAPCOM Apollo 7, Houston acquisition Guam. I will have a flight plan update at Redstone and have several items.

SC Roger, understand.

PAO This is Apollo Control, 87 hours, 2 minutes into the Mission. We are about 10 seconds away from loss of signal at Guam. We are anticipating acquisition at Redstone at 87 hours, 24 minutes. At that time we had an indication from astronaut Pogue, the CAPCOM, to astronaut Eisele that we would have an update for them on the flight plan. We are now - well into the fiftyfifth revolution, heading for South America. At 87 hours, 2 minutes into the mission, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 87 hours 24 minutes into the mission of Apollo 7. We're coming up on the Redstone tracking ship and just acquired.

SC Houston, stand by. Wally will be with you in just one minute.

CAP COM Apollo 7, Houston.

SC Roger Houston, Apollo 7, Go.

CAP COM Roger. Donn, I have a rather extensive flight plan update and what I'd like for you to do is just follow me with the flight plan and we'll go through here for about 88 hours right on through up to 100 hours. Apollo 7, Houston, opposite omni. Apollo 7, Houston, just let me know when you're ready to copy.

SC Roger. Go ahead Bill, I'm ready.

CAP COM Donn, do you have the flight plan there?

SC Roger.

CAP COM Okay.

SC Roger, I've got it right in front of me.

CAP COM Right. I'd didn't want you to have to write it on anything else. At 88 hours delete the reference to P-30.

SC Roger.

CAP COM Okay, now on the next half of the page from 88 to 90 you can delete everything on that page and there'll be two additions, so you can just draw a line through all of those if you want.

SC Should be what?

CAP COM We'll delete, cancel all the actions listed from 88 hours to 90 hours.

SC Right, I've already got that.

CAP COM Okay. At 89 hours there'll be a GNC powerup, program five.

SC What time?

CAP COM 89 + 00.

SC Roger, 89 hours powerup?

CAP COM Roger. Add 89 + 30 you'll get an update for RAD degradation test, there'll be a state vector and time of ignition. Okay. Are you ready for 90 hours?

SC Ah, Bill, you're cutting in and out. I'm only getting about half of this.

CAP COM Okay, I'll say again. Did you get those two additions? Did you get the one at --

SC All I got was delete everything from 88 through 90 and then powerup at 89.

CAP COM Roger. Okay at 89 + 30 there will be an update for radiator degradation. Okay, at -- are you

APOLLO 7 COMMENTARY, 10/15/68, GET: 872400 (CTD 1:26a) 289/2

CAP COM still reading?  
SC Roger. You want the whole G&N up at  
that time or just the computer?  
CAP COM Well, let's see. Right, that's cor-  
rect, that's a complete powerup at 89 hours.  
SC Okay.  
CAP COM And at 89 + 30 the update will be for  
the radiator degradation test. Starting at 90 hours, you  
can delete everything on that page.  
SC Roger.  
CAP COM And at 90 hours and about 10 minutes,  
you can put in there P-51.  
SC Roger.  
CAP COM At 91 hours and 42 minutes, a P-52.  
SC Wait a minute, 91 hours is in the  
daytime.  
CAP COM 91 42. Donn, we're getting ready for  
LOS here. I'll talk to you at Antigua.  
PAO This is Apollo Control, 87 hours 33 min-  
utes into the mission of Apollo 7. We have just lost acquisi-  
tion with the Redstone tracking ship, ah, the updates of the  
flight plan will be completed probably when they have acquisi-  
tion Canary Islands and that's anticipated to be 87 hours  
54 minutes. So, at this point, the spacecraft Commander  
Schirra and LM Pilot Cunningham have been asleep over 2-1/2  
hours. We're coming up on the beginning of the 56th revolu-  
tion at 87 hours 33 minutes into the mission this is Apollo  
Control.

END OF TAPE

PAO This is Apollo Control 87 hours 54 minutes into the mission of Apollo 7. We're coming up on the acquisition point for the Canary Islands at which point Astronaut Pogue here in the Control Center will complete sending up the revised flight plan for the next few hours, so let's stand by for Canary Islands.

CAP COM Apollo 7, Houston. Apollo 7, Houston acquisition Canaries. Apollo 7, Houston we'd like to continue with the flight plan update when you're ready.

SC Got 'cha, go ahead Bill.

CAP COM Roger. I think we were talking about 91 hours and 42 minutes a P-52 and you were questioning nighttime and the nighttime is starting to move back a little bit because of the change in the orbit and that should be alright just after sunset.

SC Roger. I didn't get the data on that 91:42 a 52.

CAP COM Roger. That's right 91 + 42. Okay, on the second column on page 236, starting at 92 hours, at 92:25 we have an MCC up date. You can scratch through everything except the Go-No-Go. And at 92 + 35 add initiate radiator degradation test.

SC Roger. Say again that time for that.

CAP COM 92 + 35.

SC Okay, got it.

CAP COM Right, you can delete the P-thirty -- all the references to separation for the burn of course you can delete those. At 93 + 15 add H2 strat test (60 percent) is what they'll estimate you have at that time. So that will be at 93 + 15 H2 strat test 60 percent.

SC Roger, got it.

CAP COM And the cannister change does stay in.

SC Okay.

CAP COM At 94 hours, fuel cell O2 purge.

SC Okay.

CAP COM Next page. 94 hours + 30 unstow and set up TV.

SC Roger.

CAP COM And of course you can delete the items in there about the radiator degradation test and H2 heaters are on at 95 hours.

SC Okay.

CAP COM At 95 + 25, TV on. That will be at Texas AOS, 95 + 25 TV on.

SC Rog, I got 'cha.

CAP COM Okay. On the next column, at 96 + 40 delete the reference to the ECS figure degradation test.

SC Roger.

APOLLO 7 COMMENTARY, 10/15/68, GET: 875400 (CDT 1:57a) 290/2

CAP COM At 97 hours, add End Radiator Degradation Test. You will have started it up about 92:35.  
SC Okay.  
CAP COM Also, at 97 hours, you'll receive update for scanning telescope star count. That'll be at 97 hours, update SCT star count.  
SC Okay.  
CAP COM And for that, the sun line of sight, LOS will be 70 degrees.  
SC Roger.  
CAP COM At 97 + 40, program 52.  
SC Roger, is that option three?  
CAP COM Stand by. Be at C-align time. At 98 hours, the test, the SCT star count will be performed.  
SC At what time?  
CAP COM 98 hours.  
SC 98?  
CAP COM Affirmative.  
SC I don't understand that. That's right in the middle of the night ... isn't it?  
CAP COM Yeah, but it continues into the day.  
SC ... that's going to be a little hard to -- you realign at 97:40 and then do the test at ...  
CAP COM Roger, adjust on the further edge of LOS. If you read, that is affirmative.  
SC Roger.  
PAO This is Apollo Control 88 hours 2 minutes into the mission. We have lost acquisition. The next contact will be with the Redstone tracking ship at 88 hours 58 minutes into the mission, some 57-1/2 minutes from now. At 88:02 this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 88 hours, 58 minutes into the mission of Apollo 7. We have had a long dry spell here. We are coming up on the Redstone Tracking Ship. We should have acquisition in a very few seconds.

SC Roger, Houston, GO.  
CAPCOM Roger. Acquisition, Redstone. I have one final item here on the flight plan update.

SC Ready to GO.  
CAPCOM Roger. At 99 plus 30, we will have a G & N, N and SCS power down.

SC Roger.  
CAPCOM Apollo 7, Houston, 1 minute LOS Redstone, Antigua at 17. And when we come upon Antigua, we would like for you to be in POO. We'll have a state vector for you at that time.

PAO This is Apollo Control, 89 hours, 7 minutes into the mission of Apollo 7. We are just now losing acquisition at Redstone. We're anticipating contact with Antigua at 89 hours, 17 minutes. At 8907, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET 891600 CDT 3:20 a 292/1

PAO This is Apollo Control, 89 hours 17 minutes into the mission of Apollo 7. Apollo 7 has just begun its 57th revolution around the earth. We're coming up in a very seconds to Antigua acquisition. Let's listen in.

CAPCOM Apollo 7, Houston.  
SC Roger, go.  
CAPCOM Roger. We have a state vector to send to you if you could go to POO please.  
SC Stand by.  
CAPCOM Apollo 7, Houston. If you don't get your computer up here, it's all right. We can give this to you at Canary, but I do have a nav check I can give you when you're ready to copy it.

SC Roger, stand by. I'm still on a 51 here.

CAPCOM Okay.  
SC ... Houston, Apollo 7.  
CAPCOM Go.  
SC Roger. I'll take that update now if you can send it up.

CAPCOM Rog.  
SC Go to accept if you want to uplink.  
CAPCOM Rog.  
CAPCOM And now while it's coming up, I have a nav check here when you're ready to copy.

SC Roger.  
SC Ready for your nav check, Bill.  
CAPCOM Roger. 092 05 00 00 - 1796 - 14661  
1566. Read back.  
SC Roger. 092 05 0000 - 1796 - 14661  
1566.

CAPCOM Readback is correct.  
CAPCOM Apollo 7, Houston. About 1 minute LOS Antigua.

SC Roger.  
CAPCOM And it will be Canary at 28.  
SC Rog.

PAO This is Apollo Control, 89 hours 23 minutes into the mission. We are about 20 seconds away from loss of signal over Antigua. We have about 5 minutes to go for Canary Islands tracking station acquisition at 89 hours 24 minutes. This is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 892800, CDT 3:30 293/1

PAO This is Apollo Control, 89 hours 28 minutes into the mission. We're coming up on acquisition with Canary Islands tracking station. We'll join the conversation.

SC ... Apollo 7, go.  
CAPCOM Roger. We would like for you to tackle the - Stand by.

CAPCOM Apollo 7, Houston. Which of your 02 tank fans is off?

SC Number 2 is off.  
CAPCOM Number 2 is off. Roger. That's what we thought.

CAPCOM Apollo 7, Houston. We are through with the computer.

SC Roger.  
CAPCOM Apollo 7, Houston. We'd like for you to cycle your 02 tank 2 fans on for 5 minutes, then off.

SC Roger.  
CAPCOM Apollo 7, Houston. One minute LOS Canary. Carnarvon at 05. Hear this for a time hack, you can turn those fans back off about 38.

SC Roger.  
PAO This is Apollo Control, 89 hours 35 minutes. We're looking for a pass over Carnarvon at 90 hours and 5 minutes. At 89 35 then, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 900600 (CDT 4:20 a) 294/1

PAO This is Apollo Control 90 hours 6 minutes into the mission, let's join the conversation to Carnarvon.

CAP COM Apollo 7, Houston.

SC Houston, Apollo 7. Go.

CAP COM Roger. Acquisition Carnarvon standing by.

SC Roger.

CAP COM Ah, Donn, I noticed you were going through the malfunction procedure there appeared to be just about the time we were losing you at Canaries, did you find out anything in that?

SC Roger. I found out whatever it was went away, I think, at least up to now.

CAP COM Whatever it was went away, huh?

SC Right.

CAP COM Did you arrive at that just from going through this malfunction procedure? Is that how you did that?

SC Well, not totally.

CAP COM Okay.

SC Wait until Wally gets up here. He may want to do it again.

CAP COM Okay.

PAO This is Apollo Control, 90 hours 09 minutes into the mission of Apollo 7. We have had loss of signal at Carnarvon tracking station and it's a matter of about 10 minutes before Honeysuckle Creek at acquisition so we'll just stand by. (pause) This is Apollo Control 90 hours 17 minutes into the mission of Apollo 7. It doesn't appear we'll have any further contact. We have about a minute and one-half of acquisition left at Honeysuckle but there will probably be no more voice contact. We are anticipating acquisition at Redstone tracking ship at 90 hours 32 minutes. At 90 hours 17 minutes this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 90 hours, 32 minutes into the mission of Apollo 7. We are coming upon the Redstone Tracking Ship now in the fiftysixth revolution. Let's listen in.

CAPCOM Apollo 7, Houston, acquisition Redstone, standing by. Apollo 7, Houston, 1 minute LOS, Redstone, Antigua at 5 zero.

SC Understand, Roger. I gather you were in kind of a hurry to get us to work down there today.

CAPCOM We'll go a few things, Roger.

SC I suggest somebody for tomorrow get to work on the sleep plan because I've had an hour of sleep already.

CAPCOM Roger.

SC And three have colds, I asked for an actified for each of us last night and that apparently was ignored. Houston, Apollo 7.

CAPCOM Roger, GO. We're just about to LOS.

PAO This is Apollo Control, 9 hours, 40 minutes into the mission of Apollo 7. We have just lost acquisition - and our next acquisition point will be at Antigua at 90 hours and 50 minutes. It appears that space-craft commander is up at this point. And there was some conversation with CAPCOM on the amount of sleep that should be scheduled in the coming days of the mission. At 90 hours, 41 minutes in the fiftyseventh revolution, this is Apollo Control.

END OF TAPE

PAO This Apollo Control, 90 hours 50 minutes into the mission of Apollo 7. We're coming up in acquisition with Antigua tracking station. Let's stand by for conversation.

CAPCOM Apollo 7, Houston.

SC Houston, Apollo 7.

CAPCOM Rog. I did check on the flight plan here regarding the wise query there over Redstone and I didn't get all of it, but it was something about the sleep cycle being shortened. And when I came on, the time line showed the Commander and LMP sleep cycle extended to 91 hours. Is that the way you understood it?

SC That's affirmative. It appears that someone moved the radiator test right in the middle of it. We got the radiator test initiated at 92 30.

CAPCOM All right, stand by.

SC We're just gonna have to put on our headsets and go to work up here.

CAPCOM Apollo 7, Houston. We acknowledge the error on the ground here.

SC Okay, let's have the ground get to work and work up their sleep rest cycles. We had to initiate the request, as it was to get only 5 hours per shift sleep scheduled for this last night. I asked for an extension and got it. I want the rest of these work periods worked out now. We had burn 3 and we have to have a chance to get some sleep.

CAPCOM Apollo 7, Houston, understand.

SC Houston, Apollo 7.

CAPCOM Go.

SC Rog, Bill. Can you check - I think I'd like to go ahead and try to activate our primary water boilers before we commence the radiator degradation test. And then if we have any problems while doing the radiator degradation test, and our primary water boiler goes down, find out if it's okay to activate the secondary loop with a radiator bypass. Over.

CAPCOM Rog, stand by.

CAPCOM Rog, Walt. I have something here and I think it's pretty close to what you said. I'll go through a recommended procedure here.

SC Okay, Something I'll have to write down or not?

CAPCOM No, why don't you let me do it first. I think it could be just what you wanted there.

SC

Roger.

Step 1, prior to test, reservice evaporator, if not already reserviced. Step 2, begin the actual test. Step 3, activate primary evaporator in auto mode. Step 4, if evaporator dries out, close back pressure control valve and wait 15 minutes.

CAPCOM 5, then reservice evaporator and reactivate in auto mode. 6, if evaporator dries out again, close back pressure valve and shut down evaporator. 7, continue test. 8, if evaporator out count exceeds 80 degrees fahrenheit, activate secondary loop with radiators bypassed and continue test.

SC Only one question with that. The 80 degrees fahrenheit - the rule in the past has been activate secondary loop if the temperature of the glycol evaporator outlet exceed 60. Can you confirm that?

CAPCOM Stand by.

CAPCOM Apollo 7, Houston. Regarding the 80 degree count, they say they are willing to go that high if you activate the secondary lower than that, it compromises the test. I said that I thought we ought to go ahead and look, work it at 60 and they're checking into it.

SC Okay, Understand. I don't think there's any great big problem with letting it go a little higher, Ron. I think we've got a good chance of not having to activate it anyway, but that's just a suggestion now.

CAPCOM Okay.

SC Bill, I mean, sorry.

CAPCOM Apollo 7, Houston.

SC Roger. Go ahead, Bill.

CAPCOM Hey Walt, I have a TFE recording plan for this radiator degradation test and I'd like to pass it to you over Canary at a time that it would be convenient. It has to do with leaving it in a high bit rate for portions of the test.

PAO This is Apollo Control, 90 hours, 58 minutes into the mission of Apollo 7. We have Canary Islands acquisition coming up at 91 hours, 2 minutes, which is 3 minutes from now. We'll join the crew at that time at Canary Islands. In the meantime, you heard Astronaut Schirra talking to CAPCOM Pogue here in the control center concerning the sleep cycle that has been shortened. Schirra indicates that 5 hours per shift schedule is not enough and he'd like a chance to get some more sleep. And the ground is gonna check into it. Astronaut Cunningham then talked about the procedures on the radiator degradation that is scheduled a little later on in the flight, some 92 hours 35 minutes. With about 2 minutes to wait until Canary Islands acquisition, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 910200 (CDT 5:05 a) 297/1

PAO This is Apollo Control 91 hours 02 minutes into the mission of Apollo 7. We are coming up inside of 25 seconds or so with Canary Islands acquisition. We'll stand by for further conversation.

CAP COM Apollo 7, Houston.

SC Roger Houston, go ahead.

CAP COM Roger. Acquisition Canary.

SC Roger. Did the O2 part compressor this morning about, ah, almost 33 minutes ago was 240 millimeters of mercury, ready to copy your recording update.

CAP COM Rog.

SC Houston, Apollo 7.

CAP COM Go.

SC Houston, Apollo 7.

CAP COM Apollo 7, Houston Go.

SC Roger. Wish to file report that the hand controller is GO.

CAP COM Rog. Hand control is GO.

SC That's affirmative. The anomaly has disappeared and I'm quite surprised you all weren't somewhat concerned about that, that wiped out our hybrid de-orbit for awhile.

CAP COM We were concerned.

SC You'll have to time this for me so I can get a clerical test.

CAP COM Rog. There was quite a lot of concern

down here.

SC Roger. Takes a while to check those

things out.

CAP COM Rog. Also --

SC Go.

CAP COM Okay, on the DSC recording for radiator degradation test, ah, I'll read a few comments first for radiator degradation test spacecraft will be left in high bit rate. Spacecraft com system will be set up for high bit rate record, high command. At the following times, place the tape recorder forward switch to FORWARD for 3 minutes then to OFF. Ready to copy times? At 92 + 57, 93 + 37, 94 + 29, 95 + 08, 96 + 01, 96 + 33. Comment - do not use up telemetry command reset switch during radiator degradation test. Note: you can only record voice while tape is running as scheduled above.

SC Okay. I've got the times in and I'd like to repeat the last comment. The attention is to ah, I assume you are going to rewind and leave us with a fresh roll of tape to start with? And, we'll put it forward, I also understood you were going to leave it with my command here and I'll have to hit command reset switch at the start

SC of test, I will go to forward for 3 minutes and then to off at the following times: 92 + 57, 93 + 57, 94 + 29, 95 + 08, 96 + 01, 96 + 33. Over.

CAP COM Roger. The second time was 93 + 37 and also you do not go to command reset.

SC Okay. Understand you are going to have everything set up and all I will use is tape recorder closing switch going forward at those times.

CAP COM That's affirmative.

SC And we can record at the time the tape is running. Was there anything else in that last comment?

CAP COM Negative. That's correct. You can only record voice while tape is running as scheduled at these times and you did get --

SC Roger and I assume you got a plan to dump all that out and give us a fresh tape as soon as possible afterwards. Did you read my comment that 91 hours into the flight O2 partial pressure was 240 millimeters of mercury?

CAP COM Roger, at 91 hours O2 partial pressure 240 millimeters. Also, we're setting up for a 10 hour sleep cycle for tonight.

SC 10 hours is (pause), how about 8? Bill, we can't do that, sleep five and work nine and ten the next. Try to get through an average of eight. We'll go for 8 we'll go for 8 ... 20.

CAP COM Okay.

PAO This is Apollo Control 91 hours 11 minutes into the mission of Apollo 7. We have lost acquisition with Canary Islands. We are anticipating Carnarvon acquisition at 91 hours 37 minutes. During this last pass, we heard Schirra indicate that the number two hand controller is GO. That was a situation that occurred yesterday and that was at some 82 hours into the mission where they found that the pitch down on the number two hand controller was inoperative and now checking it with the command module computer we find that the number two hand controller is Go and that anomaly has disappeared Schirra indicates. Cap Com Pogue indicated that down on the ground here in the Control Center they had ironed out a 10 hour sleep cycle for tonight and spacecraft Commander Schirra came back with "No, we didn't need 10, would like to have 8". So it looks like that's what it will be. At 91 hours 12 minutes into the mission, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 91 hours, 37 minutes into the mission of Apollo 7. We are now coming up into acquisition, just got acquisition with Carnarvon. Let's listen to the conversation.

CAPCOM Apollo 7, Houston, acquisition Carnarvon.

SC Roger, Houston.

CAPCOM Apollo 7, I have a couple of items.

First, in reference to the secondary loop activation during the radiator tests, we have reconfirmed that 80% as evap out temp is an acceptable hardware limit. However, secondary loop may be activated before 80% F as physical comfort dictates. Two, in reference to the hand controller anomaly, we would like to know which check or test did you use to verify the acceptable performance?

SC Roger, we used the standard malfunction procedure starting with the C & CS Apollo update. After passed that test, went on with the reentry, It was on page 15. Page 7, item 2, item 14, and then the final was the trend itself in which the command would normally occur. It did not occur there again.

CAPCOM Roger.

SC Zero. And there was a discrepancy with the malfunction of the fuel that only applied. This is a series where the controls are stuck on, where the malfunctioning occurred, the function did not occur.

CAPCOM Roger.

SC By the same tests there, the Apollo number one registered and the DSKY would be 75 for pitch down. It was stuck on 75 which add immediately; it does not show.

CAPCOM Roger.

SC Bill, do you want me to follow the procedure that was passed up the first time we reactivated the primary water valve I had several steps here. I think you were probably there when you passed it up even.

CAPCOM Standby a minute.

SC Do you recall a what?

CAPCOM Yes, we know, we want to confirm.

SC And when you get it, we can use a chart update, please?

CAPCOM Roger. Apollo 7, Houston, have a chart update.

SC Go.

CAPCOM 57 node at 89 plus 16, plus 24, 71.4 1/4 west.

SC Roger.

CAPCOM Okay. Apollo 7, Houston. Yes, we would like for you to activate just as you did yesterday.

SC Okay. And if it checks down, you want

SC to wait 15 minutes again, right?  
CAPCOM Affirmative.  
SC Just for my own information, what is  
a 15 minute wait, if it shut down like that?  
CAPCOM Standby. Apollo 7, Houston, we will  
get that answer. It will take a few minutes.  
SC Okay, thanks, but you understand I just  
wondered why we wait 15 minutes before we try to reservice  
the thing. I don't quite understand it.  
CAPCOM Okay. Apollo 7, Houston. I've been  
informed that flash freezing is the reason for waiting  
15 minutes.  
SC Roger, thank you. Is that any relation  
to Flash Gordon?  
CAPCOM Oh boy.  
SC The first oh boy for the flight.  
CAPCOM Right. Got me again.  
SC That's the first oh boy we've lost for  
the flight. I'm having bacon and toast and peaches and -  
CAPCOM Apollo 7, Houston, coming up on LOS  
Carnarvon, S-Band volume up, please.  
SC Houston, Apollo 7.  
CAPCOM Apollo 7, Houston, GO.  
SC Roger. Do you have any preference on  
the antenna for the radiator degradation tests?  
CAPCOM Standby. Apollo 7, Houston, we are  
working on it. Apollo 7, Houston, the antenna for radiator  
degradation test will be on the Alpha. There may be possi-  
bly be a switch to Bravo. But now it looks like A is a  
good one.  
SC Roger, Bill. We've got some beautiful  
pictures of the great barrier reef in New Zealand this  
morning.  
CAPCOM Good. How many frames roughly? All  
right, disregard.  
SC It was about 5 frames, some frames  
43 to 47. We weren't quite sure where we were until we got  
that chart update. There was between 38 - 43 to 47 on  
magazine F.  
CAPCOM Roger. Apollo 7, Houston, 1 minute  
until LOS, Texas at 19.  
CAPCOM Roger.  
PAO This is Apollo Control, 91 hours,  
53 minutes into the mission of Apollo 7. During that  
lengthy pass - from Carnarvon through Honeysuckle Creek, we  
heard about the radiator degradation tests. They are coor-  
dinating with astronaut Pogue at the Control Center on that.  
And on the number hand controller check and at the very last  
you heard the crew had beautiful pictures of the great barrier

APOLLO 7 COMMENTARY, 10/15/68, GET: 913700, (CDT 5:40a) 298/3

PAO reef in New Zealand, about 5 frames.  
We are anticipating acquisition at Texas 92 hours 19 minutes  
into the mission. It is now 91 hour 54 minutes. This  
is Apollo Control

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 921900 (CDT 6:23 a) 299/1

PAO This is Apollo Control 92 hours 19 minutes into the mission of Apollo 7. We are just completing the 58th revolution and we're approaching - should be at the point of Texas acquisition. Let's listen in.

CAP COM Apollo 7, Houston through Texas.

SC Roger, Jack Go.

CAP COM Ah, Roger, standing by. Donn, how are you this morning?

SC Fine Jack.

CAP COM Apollo 7, Houston.

SC Roger, go ahead.

CAP COM Roger. We'd like to know whether you have shown any restarts on the computers since we last talked to you at Carnarvon.

SC That's affirmative. We're now flying attitude for the ... degradation. I loaded P-30 incorrectly the first time, am loading P-30 - am trying to load it correctly. We ended up with an insoluble problem here and got a restart on it.

CAP COM Okay. Thanks Walt.

SC ... tabulate getting the attitude.

Why don't we give you a hack at the start time when we start the radiator degradation test, it may be a few minutes after 92:35?

CAP COM Okay, that's fine. (pause) Ah, Walt, we show two restarts here since we last saw you at Carnarvon.

SC ...

CAP COM Ah, so.

SC We're still in the P-30 and we proceeded to the end - ah, trying to proceed to the end of P-30 and it still didn't light the answer and then we just reflected through.

CAP COM Okay, fine. (pause) Apollo 7, Houston. We're not receiving any biomed data, do you have the harness hooked up?

SC Roger. We have (cut out) CDR connected and ... radiator test.

CAP COM Roger. Understand.

SC ... right now.

CAP COM Say again Walt?

SC He'll be back on biomed in about ...

CAP COM Okay, we'll be standing by. (pause) Apollo 7, Houston you have a go for 77 dash 1.

SC Roger. Go 77 one. We will be in attitude and starting the degradation test on time.

CAP COM Alright, copy. About to lose you over Bermuda, pick you up Canaries at 92:36.

SC Roger.

APOLLO 7 COMMENTARY, 10/15/68, GET: 921900 (CDT 6:23a) 299/2

PAO                    This is Apollo Control 92 hours 33 minutes into the mission of Apollo 7. We anticipate acquiring at Canary at 92:36, that's about three minutes from now. We will just stay up until we acquire at Canaries and go through the Canary pass and at the end of Canary pass we'll have a wrap up of the last eight hours of activity. At 92:33 this is Apollo Control standing by for Canary Islands.

END OF TAPE

CAPCOM Apollo 7, Houston through Canary.  
SC (garble)  
CAPCOM Roger, copy that.  
SC The evaporator seems to be working  
for now. I wouldn't - I don't know how long we can count  
on it.

CAPCOM Roger.  
CAPCOM Apollo 7, Houston. We would like  
tape recorder forward switched to off and then your DSE  
will be configured for this pass.  
SC Tape recorder forward is off.  
SC Jack, we have the water boiler oper-  
ating, but it (garble) seems to be driving us against the  
(garble) here. Looks like it is going to cost us more than  
we had thought it would.

CAPCOM Roger.  
CAPCOM Apollo 7, 1 minute LOS Tananarive,  
Carnarvon at 9311.

SC Roger.  
PAO This is Apollo Control, 92 hours  
43 minutes into the mission. We are about 20 seconds away  
from loss of signal at the Canary Islands now. We will  
have a recap here of the night's activities for the last  
8 hours. At 85 hours 18 minutes in revolution 54, it was  
indicated by Astronaut Eisele that he had taken two aspirin  
and one decongestant tablet at the time of his sleep cycle,  
and 20 clicks of water. That equals 10 ounces of water.  
The commander of the spacecraft, Schirra, and the LM pilot,  
Cunningham, entered the sleep period at 84 hours in the  
mission. Schirra had taken two aspirin and 20 clicks of  
water. Again, that is 10 ounces. Then there was a very  
stable period on down through 89 hours 28 minutes at which  
time the CAPCOM, Astronaut Pogue here at the Control Center,  
went through an exercise on the O2 tank, the oxygen tank,  
fans. There was no problem, it was just indicating which  
fans were on and which fans were off on the cycling. At  
Carnarvon, 90 hours 05 minutes, it was indicated by Eisele  
that the number 2 hand controller, which had given a little  
problem yesterday, pitched down position I believe, might  
be okay and that it would be checked when Astronaut Schirra  
woke up. They would check the input to the command module  
computer to see how the hand controller would operate dur-  
ing burn. At 90 hours 32 minutes, Astronaut Schirra awoke  
and indicated that he would like to have his sleep schedule  
ironed out. At 90 hours 49 minutes, CAPCOM Pogue talked to  
him again and Schirra indicated that 5 hours per shift of  
sleep was not really enough and that he would like a chance  
to get some sleep, more than 5 hours, and have the ground  
check on it. He also indicated that the number 2 hand

APOLLO 7 COMMENTARY, 10/15/68, GET: 923400 (CDT 06:38 a) 300/2

PAO                    controller is go. It was green for go and that the anomaly had disappeared, so he had checked the hand controller. Pogue then indicated that 10 hour sleep cycles would go on for tonight in the flight plan. Schirra indicated that they didn't need 10 but they would like to get 8 hours of sleep. They then checked the procedures again at 91 hours 37 minutes for the radiator degradation test and the number 2 hand controller check that Schirra had indicated came out that the controller was go. Schirra indicated at that time that he had gotten beautiful pictures of the Great Barrier reef at New Zealand. That's about it for the evening. There wasn't too active a period, there. The spacecraft looks to be in good condition, we are in rev 59 right now. We have the TV schedule this morning for 60th revolution at 95 hours 25 minutes 55 seconds into the mission, which would be 92840 central daylight time and that's it. With everything looking good, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 931045 (CDT: 7:20a) 301/1

PAO This is Apollo Control. 93 hours, 10 minutes into the mission. We are coming up on acquisition right about now with Carnarvon here in a very few seconds, so let's stand by and see what occurs.

CAPCOM Apollo 7, Houston.

SC Go Jack.

CAPCOM Okay, Walt, on your question on the fuel usage and minimum impulse, fuel usage is about .01 pounds for each engine that pulses, so if you are using 2 jets for each axis, it's .02 pounds every time it pulses.

SC A hundred pulses to a pound.

CAPCOM Yes, so you are going to get - you can get 100 jets firings per pound.

SC Roger; understand. Thank you very much. We had 35 minutes worth at about 10 pulses; 9 to 10 pulses a minute.

CAPCOM Okay, copy that.

SC Now we are down to 2 to 4 pulses a minute.

CAPCOM Roger; understand. And we have got about 30 seconds till we lose you here; you want to turn up your S band volume, and we'll pick you up over HSK.

SC Roger.

PAO This is Apollo Control. We still have acquisition at Honeysuckle in Australia. The question that Astronaut Cunningham is talking to Astronaut Swigert here in the Control Center about, is one about RCS propellant; the amount being used. This has to be used because the RCS system is used during the radiation degradation test, which now is going on to keep the spacecraft in a steady mode. And that's why he refers to the 9 or 10 pulses per minute to begin with, and now at 2 to 4 pulses per minute and they are not concerned mightily, but they would like to know how much fuel, how much propellant that is now using. We will join them now at Honeysuckle again.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 932545 (CDT 7:35a) 302/1

PAO                    This is Apollo Control 93 hours 26 minutes  
into the mission - 27 minutes into the mission. We have just  
had loss of signal at Honeysuckle Creek. We're anticipating  
Guaymas at 93 49. At 93 27 this is Apollo Control

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 935025 (CDT 07:56a) 303/1

PAO And a good, good morning from the black team, which is back on duty in the Control Center, 93 hours 50 minutes into the mission. We have called up the crew from Guaymas and here is how that conversation is going.

CAPCOM Apollo 7, Houston through Guaymas.

SC Roger Jack.

CAPCOM Roger, you are fine.

SC Roger.

CAPCOM I would like to ask you how the H2 stratification test went.

SC We haven't done that test yet. If things get pretty well settled down, I will go ahead and run it, but it's not critical and I'm not at 50 percent yet on either gage.

CAPCOM Roger, understand. And also, I would like to verify the position of - that the hand control power switch is at both.

SC That is correct.

CAPCOM Okay, fine.

PAO This is Apollo Control. We are in the midst of a radiator test and this test will continue for one full revolution. Essentially, the mode is to - there are two radiator - banks of radiators aboard Apollo 7 and they occupy about 130 degree strip around the command module. The radiator 1 bank is being isolated and pointed down toward earth, thus pointing radiator 2 on the opposite side out toward deep space. The test will - we will watch very carefully the performance, the ability of radiator 2 to take care of the load of keeping Apollo 7 cool enough during one full revolution around the earth. Here is some more conversation.

SC - inspected radiator 2.

CAPCOM Apollo 7, affirmative. We can verify that, we are watching it.

SC Also, if everything is running nominal on this thing, we obviously don't have any battery degradation. Is there any reason for -

CAPCOM Say again, 7. You got cut out.

SC Stand by. Is there any reason for running it the full 4-1/2 hours if we find that the radiators are working good? It would be nice if we could save the fuel if we could draw conclusions earlier.

CAPCOM Roger, 7. If it's at all possible, when we look at this thing we will try to cut it off early.

SC Roger, understand. You know what I'm getting at, Jack.

CAPCOM Yes, I do.

PAO This is Apollo Control. You heard Walt Cunningham discussing the radiator test. It is not a real concern, but the facts are that some 21 pounds of fuel are programmed to continue to maintain this attitude for the radiator test. And that was what Walt Cunningham was referring to when he said "You know what I'm getting at." It was fuel usage, and his point was, if the radiator is operating satisfactorily, why go ahead and test full duration, and every indication is that it is operating quite satisfactorily. The crew is probably performing a fuel cell oxygen purge at this point, and as they move around on the Atlantic side, they will start to unstow their television equipment for a TV pass on the next revolution.

PAO Apollo Control here. During this quiet period, we might make mention of the fact that in the course of the night, we received a telegram which reads as follows: Hey, guys, first you steal my song Houston, and now you steal my quote "Keep them letters and cards coming," and it's 10 to 1 when you land you will start drinking. P.S. Like all Americans, I'm proud of you. Second P.S. I was higher last night than you are now. Signed Dean Martin.

PAO Apollo Control here. The weather story this morning goes like this. The west Atlantic, partly cloudy, easterly winds 20 knots, seas running to 5 feet, temperature in the mid-70's. In the eastern Atlantic, mostly clear, winds easterly 12 to 18 knots, seas 3 to 5 feet, temperatures in the mid-70's. In the west Pacific, the weather will be fair, partly cloudy, winds from the north to northeasterly at 12 to 15 knots, seas about 5 feet, temperatures range in the upper 70's. In the mid-Pacific, area is fair to partly cloudy, winds predominantly south at 15 knots, seas 5 feet, temperatures in the upper 70's or low 80's. Here is some more conversation.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 940100 (CDT 8:06a) 304/1

CAPCOM Apollo 7, Houston.  
SC Roger.  
CAPCOM Roger, we would like to send you a new  
state vector. Would you go to ACCEPT.  
SC Okay, why don't we take a check. We'll  
turn the monitors up on it, but (garble). Jack, can you  
wait about 1/2 hour to play, we're using that 5 by.  
CAPCOM Alright, I figured that, but what we  
would like to do is to give you a -.  
SC That's okay Jack, I'll turn loose because  
of this.  
CAPCOM Okay. We can send this at Canary, if  
you would rather wait.  
SC It's clear now.  
CAPCOM Okay, coming up. Apollo 7, I'm ready  
to give you the NAV check pad when you are ready to copy.  
SC Hold one.  
SC We'll take it later.  
CAPCOM Okay, just let me know when you are ready.  
Apollo 7, Houston, we are through with the update, the  
computer is yours.  
SC Right.  
CAPCOM Apollo 7, Houston, you can turn your  
O2 tank 2 fans off.

BND OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 941100 (CDT 8:16a) 305/1

CAPCOM Apollo 7, Houston through the Canaries  
standing by.

SC Do you want tank 2 fans on for 5 minutes?  
CAPCOM Roger, you can turn them off now. Did  
you have them on for 5 minutes, Wally?  
SC Negative. We haven't turned them off  
yet. You want the tank 1 fans on for 5 minutes, right?  
We have number 2 on now.

CAPCOM Okay, Wally. Number 1 should be in AUTO  
and number 2 should be on for 5 minutes and then off.  
SC We had number 2 on for 5 minutes.  
CAPCOM Okay, then you can cut them off whenever  
you are ready.

SC Do you want that ON or AUTO? 2 was in  
AUTO. Do you want it on?  
CAPCOM Okay, after 5 minutes, Wally, tank 2  
fans should be OFF.

CAPCOM Apollo 7 Houston. We aren't reading  
the CDR's biomed data. Would you switch to LMP? Oh, 7,  
we just got CDR data.

SC Roger (garbled)  
CAPCOM And I have this NAS check data pad to  
pass up to you whenever you are ready.

SC Go ahead.  
SC Go ahead, Jack.

CAPCOM Okay, the NAS check GBP is 094 plus 15  
plus 00 00 plus 2310 minus 01215 0898.  
SC Repeat the whole thing, will you please,  
Jack?

CAPCOM Roger. GBP is 094 plus 15 plus 00 00  
plus 2310 minus 01215 089.8.  
SC Roger 094 15 4 balls plus 2310 01215 0898.  
CAPCOM Roger, that's got it.  
SC What's the outlook in Houston today?  
CAPCOM Roger, we're about 30 seconds LOS  
Canary, Tananarive at 94 plus 30.

SC Roger. Do you have news in Houston?  
CAPCOM Oh, it was real fine this morning.  
SC Garbled.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 943000 (DCT: 8:36a) 306/1

PAO This is Apollo Control Houston, 94 hours, 30 minutes into the flight. We are about to acquire through the Tananarive Station, and let's monitor this conversation. The call has not yet gone out, but I expect it to momentarily.

CAPCOM Apollo 7, Houston through Tananarive.

SC (garble)

CAPCOM Roger; you're loud and clear. We monitored your fuel real closely during that first rev in the radiator degradation test, and we show a usage of approximately 5 pounds, and we are really watching it. We'll let you know. And I'll let Gino read you the morning news.

GINO Good morning up there.

SC Roger. This is sure (garble)

GINO Wally, this is Gino. I've got a little news if you want to read - listen.

SC (garble).

GINO 7, this is Houston.

SC This is Apollo 7; go.

GINO Walt, I gotta little morning news here if you would like us to send it up.

SC Yeah, go ahead. Go ahead Gino.

GINO Okay, this morning the headlines have starred your burn yesterday, your last burn as "perfect". However, it goes on to say there was a 9 minute burn.

SC Beautiful.

GINO Randy Matson won an Olympic Gold Medal in his shot yesterday and so did Houston's Jim Hines who won the 100 meter dash in 9.9.

SC That's (garble)

CAPCOM And the Astro's lost 4 ball players to the Montreal team in the expansion draft in the National Baseball League.

SC Who did they lose?

CAPCOM Stand by. We'll get that for you later; I'm not sure. One of the news services also picked Southern Cal as the number 1 college team in the nation, and I think Don will appreciate this next statement. Somehow when Ohio State managed to slip by the boiler makers last Saturday, they slipped into the second ranking.

SC Roger; I'm surprised they are not first.

CAPCOM I don't know how they won that Saturday. Hey, it looks like your cards and letters are coming in here real strong now over the past 24 hours, and your TV ratings on the Monday morning show are pretty high.

SC (garble) on the Today Show, or were we on it?

CAPCOM You are going to have a couple hundred million people standing by. As a matter of fact, with a little work, we have managed to book you for another week.

APOLLO 7 COMMENTARY, 10/15/68, GET: 943000 (CDT: 8:36a) 306/2

SC We've got our straw hats; we'll try to  
make a show.  
CAPCOM Okay, Wally; it was really a good show  
yesterday. The Astro's lost Bateman, Brand, Duke and Herrerra.  
SC (garble) catcher. The weather looks  
real - looks good today (garble)  
CAPCOM Roger.  
SC I'll do (garble) 40 nose, small hand -  
just south of (garble).  
CAPCOM Roger, Wally.  
SC Small and similar to the (garble) type.  
CAPCOM Sounds like you guys are riding a real  
Cadillac up here; things have been going real good from where  
we sit.  
SC (garble) -comfortable suit (garble)  
CAPCOM You are 1 minute LOS Tananarive. We'll  
see you at Carnarvon.  
PAO This is Apollo Control, Houston. That  
will wrap up the conversation by Tananarive, the morning  
news passed along at 94 hours, 36 minutes into the flight.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 944700 (CDT 8:57a) 307/1

PAO This is Apollo Control Houston, 94 hours, 48 minutes into the flight. We're in contact with the crew by Carnarvon and they're getting an update. The flight plan for the next 1 hour shows just two items, unstow and set up TV, which should have already been done according to the flight plan. Then it has an item - TV on at 9525, which is Texas acquisition. The LOS by Merritt Island is shown on our flight plan as 9537, 9537. Let's listen to the conversation.

CAPCOM Apollo 7, Houston through Caranrvon.  
SC Roger. Jack, we were a little late on that last 3 minute taped business. It shouldn't be that tape, I don't think so.  
CAPCOM Alright, copy that Walt.  
SC Jack, can we have a chart update, please?  
CAPCOM Coming up, standby.  
SC Roger.  
CAPCOM Okay, ready for your map update?  
SC Go.  
CAPCOM Okay, for Rev 60, the time of the mode is 95 plus 11 plus 44, longitude 162.3 west, right ascension of 05 plus 02.

SC Thanks Jack. In a call, that's real great the way they come up with it in a hurry. I appreciate it.

CAPCOM Roger.  
SC Jack, we're going to need an update on stateside so we can let Donn go to sleep for the next hour.  
CAPCOM Okay, we'll figure that out Wally.  
SC (garble) all (garble) up (garble) regroup that. At 10:00 am Cape time we're going to go to bed.

CAPCOM Roger.  
SC (gargle).  
CAPCOM Okay.  
SC Jack, do we have a TV pass today.  
CAPCOM Right, you have a TV pass, Wally.  
SC Okay, we'll be on top.  
CAPCOM Okay, the time of TV will be about 95 plus 25, which is about - oh, about 45 minutes from now. Apollo 7, Houston, do you want to turn up your S-band, so we can pick you up over Honeysuckle.

SC Roger. This is Apollo 7.  
CAPCOM Go ahead Apollo 7.  
SC Roger, I'd use that gray tape that Paul - tape that Bob (garble) together, that kept coming apart. It's not that easy to tape the microphone together and the light weight head set, which starts coming apart. The gray tape is pretty good gear.

CAPCOM Roger, copy that.

APOLLO 7 COMMENTARY, 10/14/68, GET: 944700 (CDT 8:57a) 307/2

CAPCOM Apollo 7, Houston.

SC Go ahead Houston.

CAPCOM Wally, on the sleep cycle there, we have 96 to 116 blocked out for a crew sleep cycle. This can be used in any way that the crew sees fit for sleeping arrangements.

SC Very good. Well Jack, good ole scene in sight here again. I have Perth at night. Houston, did you read? Houston, Apollo 7.

CAPCOM Apollo, Houston, copy that.

SC Roger. That's the home of Sloans Lager where they have that good beer these days.

CAPCOM Alright. Wally, they had an earthquake at Perth two days ago.

SC Oh really, that's terrible.

END OF TAPE

APOLLO 7 COMMENTARY 10/15/68, GET: 945700 (CDT 9:02a) 308/1

CAPCOM Apollo 7, Houston, we are about 1 minute  
from LOS honeysuckle, we'll pick you up at Huntsville at  
95 17.

SC

Roger.

PAO

Apollo Control Houston here. 95 hours  
even, and that wraps up the conversation from Australia.  
We expect to acquire via the good ship Huntsville at - let's  
check that - 95 hours and 17 - 17 minutes from now. This  
is Apollo Control Houston.

END OF TAPE

PAO This is Apollo Control Houston 95 hours 16 minutes into the flight, and we are getting some carrier noise on the circuit out through the Huntsville. It has not put in a call yet to Apollo 7 nor have they attempted to reach us. Meanwhile, the Huntsville has confirmed now and Apollo 7 has been told that we are standing by. We have not heard from them. The radiator test meanwhile, continues. It will run on, presently scheduled to run through the Huntsville, according to my flight plan here. Well, at least through Pretoria 96 hours. Meanwhile, let's monitor the circuit going out through the Huntsville.

PAO That is capsule communicator Jack Swigert you are hearing right now. The other CAPCOM on the console is Gene Cernan.

PAO In general, this morning we planned to ask the crew to give us a good look around the spacecraft and show us a little of their intravehicular activities, the movements, the ease of movements from here to there. We will watch and see what comes out.

SC Jack, understand TV time now at 95 + 25, over.

CAPCOM Roger. Your TV time is 95 + 25.

SC Jack, if we start transmitting the TV at 25, how soon do you people see that in the Center?

CAPCOM Walt, it has to go through the scan converter and it doesn't take too long. We get it fairly soon.

SC (garble)

CAPCOM I couldn't get that, Walt. Huntsville isn't real good, but we will catch you at California.

SC Roger. Do our first TV transmissions go through Texas and then in the end we are transmitting through the Cape?

CAPCOM That is affirmative.

PAO This is Apollo Control Houston 95 hours 22 minutes into the flight. You have been listening to Jack Swigert update Walt Cunningham on the pass of the TV transmission and how we receive them here in the Control Center. The pass is to - we expect acquisition around 26, 27 minutes after the hour, that is of the television signal. Texas station should acquire 25 minutes, 9525. And if we have an open circuit, we will just continue to monitor.

PAO Apollo Control here. Of interest is the fact that Mrs. Eisele, the wife of the command module pilot is here in the Control Center this morning along with her parents. Harriet Eisele is from Gnadenhutten, Ohio.

APOLLO 7 COMMENTARY, 10/15/68, GET:951650 (CDT 09:22a) 309/2

PAO                      This is Apollo Control at 9524. The people who maintain the Center have put the - put two large screens available upon our data board so all the flight controllers can get a big look at the pictures. And at this point, we are beginning to see a little snow. It's 9525, we are beginning to see a little snow as we did yesterday just prior to - the network just advised that he had a minor network problem with our station in Guaymas or we have covered it through the Goldstone, California station. It should not give us a problem on TV. We are seeing some snowy lines on the screen at this point. And Eisele has just put in a call "do you see anything yet?"

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 952500 (CDT 9:31a) 310/1

PAO And Eisele has just put in a call do we see anything yet on the TV and we do not. Texas now has the carrier locked up and now we're beginning to see a little something that's coming through. Here we go. Lets have a look. It's a little lighter than yesterday. Now it's cleared up.

CAPCOM We're just getting - just starting to pick you up now.

CAPCOM Okay, we're starting to pick you up. You're looking good. It's a good picture. We can see the straps in the center seat zero G.

SC Roger. Can you see me? I'm in the left seat.

CAPCOM Affirmative.

SC Okay.

PAO That's Donn Eisele talking, now he's holding up a sign.

CAPCOM "The lovely Apollo Room, high atop everything."

SC That's right. Coming to you live from outer space, the one and only, original Apollo everything road show. Starring those great acrobats of outer space Wally Schirra and Walt Cunningham.

CAPCOM Just a minute Wally, let's see. Oh, it's a little message to Deke Slayton. A little bit closer, Wally. Kind of looks like something about "Are you a, are you a - " Looks like it says "Are you a turtle, Deke Slayton?"

SC That's right.

SC You've got ace reading today, Jack.

CAPCOM Here comes another one. Walt, oh, that a way, that's the way to turn it. It says, "Paul Haney, are you a turtle?"

SC You'll get a gold star. Perfect score.

CAPCOM And there is no reply from Paul Haney, here.

SC You mean he's speechless?

CAPCOM Apollo 7, Houston. Will you close the back pressure valves and go to INCREASE?

SC Roger, stand by.

CAPCOM It's a real good picture.

SC Roger.

CAPCOM You might take us on a little tour of your capsule there, if you have a chance.

SC Okay, standby.

SC I think we can work that out. Let's take it off the bracket and pan the cockpit a little bit.

SC At this point we are looking across the cockpit and Walt Cunningham's couch toward Donn Eisele who

APOLLO 7 COMMENTARY, 10/15/68, GET: 952500 (CDT 9:31a) 310/2

SC is preparing the spacecraft for the radiator degradation test. There you see a pen cruising by and I need to make some notes, obviously. From there we concentrate on the left seat's attitude control. You can see possibly two of the instruments for attitude control over there. In the second panel we have the switches that the machine, that are complicated to fly, and we monitor our systems on this side. At this point Walt Cunningham is

PAO You will notice Walt Cunningham reached out and recovered a pencil floating there. A very positive demonstration of weightlessness. Apollo Control Here.

SC Looking across the cockpit to the right we have most of our electrical power controls, fuel cell controls. Then as we continue across the cockpit we'll come to the right side and that window where you can see the Gulf Coast outside and with the weather and winds we've got surf galore.

CAPCOM The outside doesn't show too well due to the orb rate, Wally.

SC They are now going to work their way down into the lower equipment bay below the navigation station. Here you can see the heart of the navigation system of the Apollo spacecraft, the command module that is, the sextant and telescope, the near large object is a monocular type device is the telescope and adjacent to it, the small instrument is the sextant. We acquire a known star in the telescope and then acquire in the sextant where it can be marked on a rather carefully graduated gimbal to give us the exact position of the star.

SC I'm now panning over to Wally who is going to get the telephoto lens out of its stowage compartment and we'll attempt to do the out-the-window photography.

CAPCOM Walt, the out-the-window doesn't show up very well, Walt, due to the orb rate -

SC Do you want to skip the out-the-window?

CAPCOM We'd like you to keep it inside. The orb rate just makes it impossible to see much outside.

SC Roger understand. Okay.

CAPCOM Wally, this is Gene. Deke just called in and we've got your answer and we've got it recorded for your return.

SC Roger. Real fine. We'll now show you the lower equipment bay where we have the water control and oxygen control panels and one panel where we can also change the lithium hydroxide in flight, to change out when needed. I've just opened one of our food bays and when I pulled the switch down you'll notice that we have a real good package that is portable. This bay is so empty. We'll switch

SC to another bay, starting tomorrow. This is an empty food bay with food rolled up rather tightly for the first 4 days of consumption. Our dietician, Rita Rapp, will appreciate how tightly we repackaged the empty packets of food. And now, we will rotate the camera around through the lower equipment bay back out towards the cockpit. I'm sure the spaghetti that you see, which is the coax cable, that I'm holding. Walt Cunningham is working with our exercise device. Using an (garble) motion to stimulate his cardio vascular system. You can take the same device in all the (garble) and use the arms in a curling motion to create exercise in the upper torso. I'm going to swing now to the other side of the cockpit, where you can see Donn is still rotating the attitude of rather a tight (garble) to prepare for our radiator degradation test. You can see we have our lighter moments. Have you got Haney's answer yet?

CAPCOM No, Haney isn't talking Wally.

SC Roger, and how much more time do you want on this machine?

CAPCOM Somebody tells me he isn't talking, but just buying.

SC He is buying, thank you very much. Very good. We will now take you down below the couches, to our storage area. This bottom opens up to be a sleep station. The (garble) below is a head rest swings off and stows. The large bulky bag that you see off the camera left is your (garble). Jack, do you still have the picture looking pretty well?

CAPCOM The picture quality isn't as good now after the handover to the Cape, but we can still make it out.

SC I'm going to take you through the area where the water is collecting. This is the area where water was condensing on the pipes, just below the Commanders left shoulder. You will notice that the panel here was refrigerated, and with the (garble) there is water condensation on the pipe. We vacuumed it off (garble) and it forms a large ball of about the size of a ping pong or golf ball.

CAPCOM Okay Wally, we've lost the picture now. We copied the water condensation and we saw the beginning of your transmission on the water condensation now.

SC Very good

CAPCOM That was a real good pass.

SC Say Jack, we've got the steam pressure up okay, but we don't seem to be able to put it back up in the boiling range and we are not boiling now.

CAPCOM Walt, we would like you to reservice the primary evaporator.

APOLLO 7 COMMENTARY, 10/15/68, GET: 952500 (CDT 9:31a) 310/4

PAO This is Apollo Control Houston, 95 hours, 37 minutes into the flight and we brought the picture to an end. You can see the degradation as we moved out of the outer limits of the Merritt Island circle. We can thank Commander Wally Schirra for a tour of Apollo 7 cabin, and he held up a few signs with some questions on it, which were, I suppose, meant to elicit a certain answer. We did get some operational information on that pass, which was of interest here. He was trying to show us what the water condensation looked like on some of the machinery inside the cabin toward the end. You might have heard, the com was pretty rocky there, but you heard Jack Swigert confirm that we did understand he was trying to show us the water condensation. All in all, it was a very worthwhile pass. We should continue to hold lock here on out through the ship Vanguard for another 5 minutes. We'll keep the line open and monitored. There has been no conversation now for several minutes.

CAPCOM Apollo 7, Houston. One minute LOS Bermuda, we'll pick you up at Canary at 95 plus 46. That was a real good tour of your castle there.

SC Roger, welcome aboard. Hey Jack, does that go out live?

CAPCOM That went out live.

SC Is Deke Slayton out of the press conference now?

CAPCOM Deke isn't here right now, Donn, but Harriet's in the Control Room and watches all.

SC Roger, understand. Tell her hello for me.

CAPCOM You just did, she's nodding her head.

SC Okay.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GBT: 954000 (CDT: 9:31a) 311/1

PAO                    This is Apollo Control Houston, 95 hours, 44 minutes into the flight. We have lost signal through the ship Vanguard; we should acquire for a very peripheral pass through the Canary Islands. And meanwhile we are continuing with the radiator test; that's the main flight planned item.

BND OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 955220 (CDT: 9:58a) 312/1

PAO This is Apollo Control Houston, 95 hours 52 minutes into the flight. We had a very brief conversation with Apollo 7 by the Canary Islands and here is how that conversation went.

PAO I am sorry; we do not have tape of it; it was simply a call up and an acknowledgement and that was that. My error. We expect to reacquire by Tananarive at 96 03 minutes after the hour, about 10 minutes from now. This is, on the TV pass, we clocked here in our tape facility, 11 minutes worth of television tape. Eleven minutes, which was 4 minutes more than we had yesterday. This is at 95 hours, 53 minutes. This is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 960300 (CDT: 10:04a) 313/1

PAO This is Apollo Control Houston, 96 hours and 3 minutes into the flight. We are going to try to advise Apollo 7 that we are standing by here in a moment, but the circuit sounds noisy this morning through Tananarive. One comment on the television tape which you might have missed. In looking at the tape carefully, and this came up in a conversation the second time we looked at it here in the Control Center, you begin to appreciate the true size of Apollo. Remember the internal volume is nearly 4 times that of Gemini. 320 cubic feet versus 80 odd for Gemini. And the pilots, as they presented their Q cards and so forth in the opening sequence, were coming to us, they were floating out of an area under the Command Module's seat. Don Bisele was in the Commander's seat on the left side, and we saw Wally Schirra and then Walt Cunningham sort of staging from an area immediately under that seat and floating up and then across our field of view. Then of course Wally pointed the camera down into the lower equipment bay and he did a wonderful explanation of the optics. Now we have reached Apollo 7; let's listen.

SC We've got over 3 hours at the last of this test that you were (garble) and expected.

CAPCOM Wally, we are not reading com very well through Tananarive here.

SC (garble)

CAPCOM How do you read Apollo 7? Okay, Apollo 7 Houston.

SC Roger. We will (garble) when we have a pass.

CAPCOM Wally, we have been monitoring the fuel usage very closely. They find the fuel usage is nominal for this test. We would like to continue the test and use the secondary evaporator and it requires to lower the evaporator temperature. Com is very bad here over Tananarive; we will have a real good pass with you through Carnarvon.

SC Roger. The primary evaporator is working fine again.

CAPCOM Okay, copy that, Walt.

CAPCOM Apollo 7, you're 1 minute LOS Tananarive; we'll pick up ARIA 1 in about 2 minutes monitoring you there through Carnarvon.

SC Roger. (garble)

CAPCOM Roger; out.

SC Hey Jack; this is Walt. Give me 30 clicks on the (garble) miles per hour.

CAPCOM How many clicks Walt?

SC 30 -

CAPCOM Roger; 30 clicks. (garble) And 2 -

of CBS.

SC

(garble) for C and P

APOLLO 7 COMMENTARY, 10/15/68, GET: 960300 (CDT: 10:04a) 313/2

SC

(garble) This is Apollo 7.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 962025 (CDT: 10:15a) 314/1

PAO Apollo Control Houston here at 96 hours, 20 minutes into the flight. We just acquired through Carnarvon and here is how the conversation is going.

SC with the slide in place, excuse me, and we made 4 shots there and probably 3 or 4 other ones through the flight at random.

CAPCOM Okay, I copy that Walt.

SC Jack, go ahead with your updates.

CAPCOM Roger. Block data 11 063-4A plus 305 minus 1599 099 plus 36 plus 59 3402 064-4A plus 309 minus 1600 101 plus 13 plus 24 3578 065-4A plus 269 minus 1600 102 plus 46 plus 04 2888 066-3A plus 309 plus 1363 104 plus 04 plus 38 3403 plus 067-3A plus 306 plus 1362 105 plus 41 plus 04 3607 068-3B plus 261 plus 1344 107 plus 13 plus 10 2888.

SC Roger; that's complete, your block update

Jack?

CAPCOM Affirmative.

SC All right; read back as follows. Did you start with 62 or 63?

CAPCOM 063-4A.

SC You're 063-4A plus 305 minus 1599 099, 3659 3402 064-4A plus 309 minus 1600 101 13 24 357.8 065-4A plus 269 minus 1600 102 46 04 2888 066-3A plus 309 plus 1363 104 04 38 3403 067-3A plus 306 plus 1362 105 41 04 3607 068-3B plus 261 plus 1344 107 13 10 2888.

CAPCOM Roger; that's correct.

CAPCOM Apollo 7, Houston. Did you purge 02?

SC I purged 02 at the regular scheduled time which was 7 hours ago I think, wasn't it?

CAPCOM Roger; we copy.

SC Check the time on that will you Jack?

CAPCOM Roger; it should have been at 94 hours.

SC That's right; we purged at 94 hours.

CAPCOM Okay, thank you.

SC We're going through a meal now and probably have a gripe; the cracker type food; chicken sandwiches; they are all crumbly and we have a lot of problem with crumbs all over the cockpit. We have been rejecting a lot of this.

CAPCOM Okay, Wally, we copy that. You are about 1 minute LOS Carnarvon, and we won't get you again till Hawaii at 96 plus 45.

SC Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 963000 (CDT 10:25a) 315/1

PAO Apollo Control Houston. We are now 96 hours 31 minutes into the flight and I think we are probably out of communications through the Australian circle, at least we are passing over the northeastern edge of the continent of Australia. Just before we came into Australia, you heard, if you were monitoring the release loop, some excellent commentary - communications let's say through the one of the aircraft - one of the KC135 flying radio stations which we are exercising during this mission. The aircraft was flying at about 40,000 feet in the mid-Indian Ocean and the atmospherics must have been very cooperative today, because that is the clearest communications we've heard in the 4 or 5 days of this mission. Through an aircraft we could hear them and they said they could hear us quite well. At 96 hours 32 minutes into our mission, we now will have an out until the spacecraft is acquired by Hawaii, which acquisition should come at 96 hours 45 minutes. This is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 965356 (CDT 10:49a) 316/1

PAO Apollo Control Houston. We are 96 hours 53 minutes into the flight. A few minutes ago, we called Apollo 7 through Hawaii and here is how the conversation has gone.

CAPCOM Apollo 7, Houston through Hawaii.  
SC Roger. We completed all our data recording through you. Are you going to be dumping that tape now?

CAPCOM Apollo 7, Houston. We are going to rewind the tape here. We will dump it over the States.

SC Roger and can we secure this test?  
We will continue for 30 more minutes.

CAPCOM Okay, we are going to secure at 97 hours, Wally.

SC Roger.

SC Jack, this is Wally.

CAPCOM Go ahead.

SC This is really a thrilling flight control test. One slow roll in an hour and a half.

CAPCOM (Laughter) Roger, copy that.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Walt, I have this daylight scanning telescope star count pad to give you whenever you are ready to copy.

SC Okay, the daylight scanning telescope star count or the sextant star count, Jack?

SC Jack, how about giving me a little more on that one, that is impossible to use. Houston, Apollo 7.

CAPCOM Wally, we will give you a hack on your fuel use on this - the fuel usage we have copied so far has been between 17 and 18 pounds, which is right on the nominal for this test.

SC Houston, Apollo 7.

CAPCOM Okay, Walt, stand by one.

SC Jack, on observing details we want to feel we've learned something up here in 5 days that somebody else hasn't learned yet.

CAPCOM Say again, Wally, I missed that.

SC Let's assume we have learned something up here in the last 5 days that we didn't know before we came up.

CAPCOM Okay, I have this daylight star count pad assessment.

SC Okay, we will take it.

CAPCOM Okay. GET of sunrise 98 + 15, roll  
000, pitch 097, yaw 000. GET of sunset -1298 + 56, roll  
000, pitch 327, yaw 000. Your key align will 98 + 15, and

APOLLO 7 COMMENTARY, 10/15/68, GET: 965356 (CDT 10:49a) 316/2

CAPCOM the only remark -  
SC We have to do this key align for these angles? We have our refs on that now.  
CAPCOM Roger. The key align is for those angles. And the other change on this is that the shaft will be 90 degrees and a trunion 0 degrees.  
SC Okay, 0 shaft 90. Donn has got something to report.  
SC We did this test a couple of days ago, with a 120 degrees angle up and I just didn't see much point in it. Your ability to see stars is not so much the function of light transmission of the telescope as it is a matter of stray light you got coming in from loose particles flying around outside that look like stars and also in stray light that comes up from the earth and whatnot, distorting the telescope picture. Jack the point is I don't think you are learning a heck of a lot from this. We know already that the stars aren't (garble)  
CAPCOM Okay, Donn. We've got real poor com. I can't quite copy. Let's wait until we get over the coast and we will have a little better com.  
SC Roger.  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Roger. Computer says that the evaporator might be drying out again.  
SC Darn right.  
SC Jack, I've been trying to tell you that with realignment, we lose fuel, get into a new attitude, fly two different attitudes to prove what we have already discovered in this flight, that you can't see stars in the telescope except just after sunrise or just after sunset, which we have been trying to tell the Project Office for about 5 years.  
CAPCOM Roger, copy that. Wally, this test here has the telescope sunlight of sight off at 7 degrees, which is worst case and we would kind of like to get this one in.  
SC That's what I've been trying to tell you. With the best case we didn't do any good, but if you want us to do the test, we will do it. But we are kind of tired of arguing with people that produce this environment. I'm not talking about you, but the various things you don't know about telescopes.  
SC We will try out the test Cape time.  
SC Is the radiator degradation test over yet?  
CAPCOM Apollo 7, Houston. You can discontinue the radiator degradation test.

APOLLO 7 COMMENTARY, 10/15/68, GET: 965356 (CDT 10:49a) 316/3

SC

Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 970300 (CDT: 10:58a) 317/1

SC Right over us here today.  
CAPCOM Go ahead Apollo 7.  
SC Roger; we are looking at your pretty  
white (garble) today.  
CAPCOM That's affirmative.  
SC We (garble) weather.  
CAPCOM Apollo 7, Houston.  
SC Go ahead Jack.  
CAPCOM On, while you are taking photographs,  
during this Stateside pass, or the next ones, if you can  
fit it in, we would like to get a picture of Tucson and a  
picture of a tropical storm which is presently just south  
of Cuba.  
SC Understand Tucson and a storm just south  
of Cuba.  
CAPCOM Roger; Tropical storm Gladis just south  
of Cuba.  
SC Which end Jack, south of Haiti or south  
of the (garble)?  
CAPCOM  
SC If you could give us latitude and longi-  
tude that would help us.  
CAPCOM Stand by Wally. Okay, the present  
position of this storm is south of the eastern tip of Cuba,  
and east-western tip of Cuba and east of the Yucatan Peni-  
nsula.  
SC (garble) up through the (garble) Islands?  
Okay, we got a pretty good longitude on - (garble)  
CAPCOM Next pass; it looks like you would be  
in a little better position; it looks like you might even  
pass right over it.  
SC Roger. Jack at this time would you  
let me check clicks on the water dump?  
CAPCOM Roger; copy that.  
SC Give Walt 15 clicks.  
CAPCOM 15 for Walt.  
SC The star will take 20.  
CAPCOM Okay. Apollo 7, we show you approaching  
gimble LOX.  
SC That's what you call skirting the issue,  
just going by the edge.  
CAPCOM Roger. Jack, on that Tucson-Phoenix;  
did you want the panex or the 121?  
CAPCOM Stand by.  
CAPCOM We'll get you that by the next pass.  
SC Roger; plenty of time.  
SC Jack, on that tropical storm coming up  
there, do you expect that to come up into the Gulf of Mexico?  
CAPCOM Right now the forecast is past up into  
the west coast of Florida.

SC I see it.  
 SC Jack, on that pass would you log the following pictures magazine S? Starting down around about 55, we got two good pictures of Houston, 2 of New Orleans, Mobile Bay, Pensacola. Wally got the Mississippi Delta, the Port Walter area and that was about it. The Cape was cloudy, patchy broken  
 CAPCOM Okay, copy that.  
 SC Jack, I would recommend for the next crew that they try to eliminate as much of the protein in the bite size food that's bothering all of us already.  
 CAPCOM Okay, we copy.  
 SC The hot one.  
 SC I thought the breakfast drink was going over very well, but we need a better type of fluid.  
 CAPCOM Okay, copy. (cut off) he hear. Wait till I get my sheet out.  
 CAPCOM Apollo 7, Houston. Apollo 7, Apollo 7, Houston.  
 SC Go ahead.  
 CAPCOM Apollo 7, Houston. Regarding this daylight scanning telescope star count, we're not going to be able to do it with the present revs MET because of a Gimbal lock problem. We understood yesterday, that we saw more stars than we anticipated at the 120 degree line of sight. We would like very much to get this test in at the 70 degree line of sight. Over.  
 CAPCOM Apollo 7, Apollo 7, Houston. Did you copy?  
 SC Yes, we read you.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET 971300 CDT 11:08

318/1

PAO                      This is Apollo Control Houston 97 hours  
14 minutes into the flight with Apollo 7 out in the far  
eastern tip of Antigua acquisition circle. We're rather  
sure that will wind up the comm for this pass. This  
is Apollo Control in Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 972755 (CDT 11:23a) 319/1

PAO Apollo Control Houston 97 hours 17 minutes, and through Ascension we've been having this interesting conversation.

CAPCOM Apollo 7, Houston through Ascension.

SC Roger.

CAPCOM Roger, you are 5 by. Do you copy our conversation on the scan telescope star count that we were giving you over Bermuda?

SC I got you, Roger.

CAPCOM Okay.

SC I've got some information for you. If you were in pitch and roll, if the stick is released it will follow a jet rapid direction exactly as in the simulator.

CAPCOM Could you go over that again, please?

SC Okay, it's (garbled) mode, beta impulse.

CAPCOM Roger.

SC If one pulse in ready to roll out, the stick is released (garbled).

capcom Roger copy that.

SC It's the same as the sticks in the simulator, it's that unique.

CAPCOM Okay. The other thing we wanted to ask you is to do - you could do the H2 stratification test whenever you can fit it in there.

SC Roger, thank you. That's inside the next half hour.

CAPCOM Okay, we'd like you to put your tape recorder forward switch to FORWARD.

SC Roger, are you through dumping?

CAPCOM Affirmative.

SC It is in forward.

CAPCOM Okay. The other thing we'd like to get is the general crew status with a status on each man. Could you give us a rather complete rundown on each man - how they're feeling today?

SC This is CDR. I still have a rather thick mucous nose cold. The three of us are coughing. We're very well rested although last night was rather a short night, and we'll take advantage of the longer hours tonight to catch up again. We've all had plenty to eat and drink, if not too much. The sight of the food is just too rich for us. I'm still on aspirin and I'm off Actifed at this time, and all of us are getting out of Actifed. We don't have enough left to keep taking it for the length of the mission. We'll use it prior to reentry.

SC This is the CMP. My only complaint is a head cold just like Wally. I find that my ears plug up now and then. I would take the Actifed except for running out of it. We're saving it for reentry in case we need it then.

APOLLO 7 COMMENTARY, 10/15/68, GET: 972755 (CDT 11:23a) 319/2

SC other than that I'm in good shape. I've had plenty to eat and drink, had plenty of sleep. No problems.

SC Are you still reading Jack?

CAPCOM Roger.

SC Okay, I'm in good shape. I've been sleeping a little better each night and my ears are just barely clear some mornings and sometimes not. I don't feel bad, I don't feel like I've got a cold. I just feel like I'm pretty well stuffed up and on the verge of getting one.

CAPCOM Okay, copied that. Apollo 7, have any of you had an indication of a temperature rise?

SC Negative.

CAPCOM Okay, fine. Sometime, no hurry on it, you might give us a count on your medication remaining. We sort of lost track here.

SC Okay. We've been logging it, and calling it down, Jim, if you haven't gotten a report on every bit of it. One interesting observation, with a head cold the mucous does not go down the throat and cause a lung problem. It stays stuffed up in the sinuses. This is due to zero gravity I'm sure.

CAPCOM Okay, copy that.

SC Jack, this is Donn. I just did a daylight P-52. How it happened, we rolled over so that we're pointed up to the stars. I did P-52 and pick a pair worked, so I lucked out. It turns out that you can in general see stars in the sextant provided it's not too close to the sun and provided all the optics will pull them in for you, but of course it's impossible to see anything through the telescope under these conditions.

CAPCOM Roger, copy.

SC (break into conversation) by the stars I marked on explicitly. I assume they are right because the star difference angles was proper.

CAPCOM Okay, real fine.

SC I wouldn't want to hang my hat on that if I were going to the moon, however.

CAPCOM Roger, understand.

SC I'd like to make the point, you can prove the two stars by the star angle difference like 4 balls 1.

CAPCOM Okay.

SC And by the pick a pair.

CAPCOM Okay, Apollo 7, Houston. We show that one panel is still isolated, and we're about to lose you over Ascension. We'll pick you up at Tananarive here at 497 plus 38.

SC Roger. That's a good call down there, thank you.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET 973810 CDT 11:33a 320/1

PAO This is Apollo Control, houston. We're  
97 hours 38 minutes into the flight, and via Tananarive we're  
about to acquire. Stand by.

CAPCOM Apollo 7, Houston through Tananarive.

SC I read you.

CAPCOM Roger, we're standing by.

PAO This is Apollo Control, houston, here in  
97 hours, 40 minutes into the flight. In discussing the  
situation, the Flight Directors concluded that the comm  
circuit through Tananarive today is a bit too choppy so we  
will take it down.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 980030 (CDT: 12:03p) 321/1

PAO This is Apollo Control Houston at 97 hours 56 minutes. In the recent swing across the Indian Ocean we tried without success to raise the spacecraft through an ARIA aircraft over the Indian Ocean, and as I say, the, - we were not successful but we have established com however through Carnarvon and here is how it's going.

CAPCOM Apollo 7, Houston through Carnarvon.

SC Roger, Jack. I tried to put the primary evaporator back on the line and it didn't make it.

CAPCOM Okay, I was trying to reach you through ARIA 1 to do that S band BTO for ARIA.

SC We didn't hear you.

CAPCOM Roger; I didn't hear you either. On your question about the film over the Stateside pass for the pictures of Tucson, the film to use is S0121.

SC Roger; thank you. Jack, out of curiosity how many different kind of S band passes are there? I'll give you time to figure that one out.

CAPCOM 7, it appears to be about 20 or 30 different types of modes and conditions for S band communications kinds here.

SC Roger.

CAPCOM Apollo 7, Houston. On the primary evaporators, did you reservice this before your attempts to put it back on the line?

SC Sure did. We reserviced it over Canaries.

CAPCOM Okay, copy.

SC Temperatures are even running pretty hot; can you confirm that both of my radiator panels are slowing down?

CAPCOM Okay, copy.

SC Temperatures are even running pretty hot; can you confirm that both of my radiator panels are slowing now, the individual temperatures, please?

CAPCOM 7, both of your red panels look good.

SC Roger, thank you. Houston, Apollo 7.

CAPCOM Go ahead Apollo 7.

SC I'll give you a medication count; there are 3 categories; actifed, aspirin and one more pill. (garble)

CAPCOM Apollo 7, I didn't copy that you are going to give us the quantity remaining of the three medications.

SC Yes, the quantity used to (garble)

CAPCOM Okay; go ahead with the quantity used.

SC Roger. CDR actifed 6, aspirin 17, loma-til 2. CMP actifed 2, aspirin 2.

CAPCOM Copy.

SC LMP 1 actifed.

CAPCOM Roger; copy that. Thank you very much.

APOLLO 7 COMMENTARY, 10/15/68, GET: 980030 (CDT: 12:03p) 321/2

SC Roger.  
CAPCOM Apollo 7, Houston. 30 seconds LOS Carnar-  
von; a short pass at Guam at 9807, Hawaii at 9818.  
SC Understand.  
PAO Apollo Control here, 98 hours, 2 minutes,  
into the flight and we are about to lose signal by Carnarvon.  
This is Apollo Control Houston.

END OF TAPE

(CORRECTED COPY)

APOLLO 7 COMMENTARY, 10/15/68, GET 981150, CDT 12:14p 322/1

PAO Apollo Control here 98 hours, 10 minutes into the flight, and through Guam a few minutes ago we acquired, we really hadn't been expected, because the spacecraft is passing below Guam. But we're getting excellent comm. Here's how it's going.

CAPCOM Apollo 7, Houston through Guam.

SC Roger.

CAPCOM 7. We haven't had a window status check in a while, how are they doing?

SC Roger. I think I would rather give you a report when there's daylight, Jack.

CAPCOM Okay, Real fine. And the other thing I was kind of curious about, Wally, can you hear the thruster -- the RCS thrusters fire?

SC Affirmative.

CAPCOM Okay, real fine.

SC Only when they light off we can't hear them when they're burning.

CAPCOM Okay,

SC Right now the main thing is you can hear a pause. It sounds like your hearing - as Donn describes it -- a water (garble)

CAPCOM Roger. Copy.

SC however, (garble) it seems to have almost a surge of power. It fluctuates back and forth on a sort of a cyclic beat, rather than a steady, smooth, application of power.

CAPCOM Okay, copy. We're about 40 seconds from LOS Guam. Hawaii at 9880.

SC Rog, how about passing this discription on to John Healy.

CAPCOM Roger, copy.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 982523 (CDT 12:28P) 323/1

PAO This is Apollo Control Houston 98 hours 25 minutes. We're in touch with Apollo 7 through Hawaii. Earlier through Guam you heard Wally Schirra ask - relay a message and the more understandable parts of the communication was the name John Healy. John Healy is an engineer who headed the management development team which worked on Spacecraft 101, now called Apollo 7. He is an employee of the North American Rockwell Company, and he was in the viewing room and heard the transmission. We're not sure we understood it fully and it's being listened to in very slow time and transcribed for Mr. Healy's benefit. We have this communication, however, by Hawaii.

CAPCOM Apollo 7, Houston.

SC That set of angles was very good this time and we found the moon right in the middle of the telescope.

CAPCOM Roger, copy. We would like to send you up a NAV load and I'm ready with a NAV check when you're ready to copy. Would you go to ACCEPT.

SC Let's have the NAV check.

CAPCOM Okay, coming up. The NAV check as follows: 102 plus 30 plus 0000 minus 1154 plus 06596 1522

SC Roger, read back as follows: 102 30 4 balls minus 1154 plus 065961522. Over.

CAPCOM That's correct.

SC Jack, Did you get the impact of the moon being in the telescope?

CAPCOM Roger, we're discussing that right now.

SC Yeah, you don't count stars when you look at the moon.

CAPCOM Roger, we're scratching our heads.

SC (garbled) like we are.

CAPCOM Apollo 7, Houston, the load is in, we're finished, the computer is yours.

SC Roger. That's getting up fast.

SC Houston, Apollo 7. We should be able to hack the star count on the next pass. The G and N (garbled) will not be in the next attitude.

CAPCOM Roger, we copy.

CAPCOM Apollo 7, Houston. We're all ready for the keying test.

SC Take one on that keying test.

CAPCOM Roger.

SC I'll go ahead and give you a keying test. We're coming up on a photo shortly.

CAPCOM Roger, 7, could you stand by one, we lost -

SC Okay, I'll stand by.

SC Are you ready on the keying?

APOLLO 7 COMMENTARY, 10/15/68, GET: 982523 (CDT 12:28P) 323/2

CAPCOM Not yet, we're still standing by.  
CAPCOM Apollo 7, Houston, we're ready for  
the keying test.  
SC Roger Apollo.  
SC Keying test over.  
CAPCOM Roger.  
CAPCOM Apollo 7, Houston. we are through  
with the keying test. You can reconfigure your spacecraft  
per the flight plan, and you only made two mistakes.  
SC Yeah, I saw a couple of blips (garbled)  
CAPCOM Roger.  
SC Back to configuration.  
CAPCOM Okay, cover.  
PAO This is Apollo Control Houston. That  
keying test was a test of an emergency communication system.  
And the message is as follows: "This is a test of the  
emergency key." You heard the CAPCOM acknowledge two slight  
errors as Walt Cunningham sent that, but it was all together  
readable. So we've communicated by voice, by television,  
and now by telegraph key today.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 983600 (CDT: 12:38p) 324/1

SC (garble) through 67, (garble) magazine "O"  
CAPCOM Okay, copy that.  
SC We are now looking at the storm. You might  
give us a map when you think we are adjacent to it.  
CAPCOM Okay, will do Wally. You got a little ways  
to go yet.

PAO This is Apollo Control Houston. The crew  
should be passing over that large storm Gladys here very  
shortly and perhaps they'll comment on it. The emergency key  
transmission was done through the voice com push-to-talk key  
for it was literally being pushed on and off like a telegraph  
key.

SC Okay, looks like one big overcast about 12  
o'clock.

CAPCOM That should be it. The tropical storm will  
be south of your flight path here, your flight pass should take  
you right over Cuba and the tropical storm will be south of  
the western tip of Cuba.

SC Roger.  
SC We'll take a step going into it; I would  
suggest that.

CAPCOM Okay.  
SC We've got one big stormy area out here Jack;  
I don't pick up a characteristic tropical storm.

CAPCOM Okay, right now the wind speeds are about  
45 knots - tomorrow sometime the winds are forecast to pick up  
to 70.

SC (garble) up into the Gulf by tomorrow (garble)  
CAPCOM Roger; there are a few other people with  
the same problem.

SC Understand. I've got a minute, a chance  
to get (garble)

CAPCOM I think you're right.  
SC (garble)  
CAPCOM I think that is part of the duties of the  
support crew; we'll take care of it Wally.

SC I think (garble) Jack.  
SC Jack, frame 68 was the call cover that  
(garble) not really a storm as (garble)

CAPCOM Roger; copy.  
SC Could you get a rate (garble) there Jack?  
CAPCOM Roger; stand by.

SC The pitching there now is not something I  
put in it; (garble) with that little (garble)  
CAPCOM Wally, right now it looks like we've got  
a pitch rate of plus .3.

SC Roger; I don't really think we have anything  
to worry about on 1 or 2 pulses and the spacecraft is actually  
torquing - it's off it's pitch, that's all it's costing us earlier  
on the radiator degradation test. We think it's just the way it

APOLLO 7 COMMENTARY, 10/15/68, GET: 983600 (CDT: 12:38p) 324/2

goes through an attitude at a certain surge affect, what little there is.

CAPCOM Okay.

SC That's a pretty good track on the (garble) there, most of the pulse in that direction in pitch. And you can see what happened.

CAPCOM Okay, we'll get a little more accurate hack at it when we take a look at this strip chart.

SC Right; let me know what you take note on it.

CAPCOM Okay.

CAPCOM Apollo 7, Houston. We'd like to have you turn your 02 fans, tank 2, on for 3 minutes.

SC On. Roger. I finished the hydrogen stratification test and it's about like the first one, there was a slightly noticeable pressure decrease when I turn the fans on. On the order of maybe 2 psi, something like that, and it's stabilized out right here.

CAPCOM Okay, real fine Walt.

SC Jack, note the pitch rate right now. It is decreasing yet I have not turned pitch (garble). And there are no thrusters firing. It's a good pass to make note what we're talking about.

CAPCOM Okay, we got it; we'll look at it real close.

SC Okay, there is no pitch (garble) I've made a note of this all during the flight and thought on this pass to get a record on it. Note the pitch rate is decreasing all the time.

CAPCOM Okay, we'll really take a good look at it.

SC Okay, this is what we had a heck of a time trying to explain to ourselves. It was pitching in the right direction so I wasn't going to take it out. I was going to pitch zero. There was no IVA during that either by the way.

CAPCOM Okay, copy that; it sounds like you got a built in orb rate walker there.

SC Yeah, see there; it's almost zero pitch. I haven't done a thing to it. In fact, (garble) pitch than the 326.

CAPCOM Roger; that's what we're looking -

SC (garble) That's 2 more.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 984600 (CDT 12:48p) 325/1

SC - we didn't know what was heating us up during the radiator degradation test. We were going through these kind of attitudes, and had to work to get through.

CAPCOM Copy. We still were nominal on fuel during that whole test.

SC Understand but (garble) is about like this. (Garble) back to zero again.

CAPCOM Roger.

SC Jack, being nominal on that test, it come out 3 points (garble). Donn and I - on numerous tries the simulator ran well below the nominal fuel usage on that thing where there were no parts.

CAPCOM That's real information, Walt.

SC (garble)

SC Houston, do you still read?

CAPCOM Roger, we are still reading you, Wally.

SC that's a zero reading several pulses.

(garble) reading this one, over.

CAPCOM Say again.

SC (garble) reducing the data on this one.

CAPCOM We have people busy on it, and we are watching it right here.

SC That's it. Do you think it is going to reach (garble). I'm back to zero again. (Garble) The best exercise in rocket (garble).

SC And it's back to zero again. (Garble) Canary in about 2 (garble)

SC You might know it's not precise (garble) Canary is much more precise than it is (garble).

CAPCOM Roger.

SC (garble) give it to you.

SC Well, (garble) from the flight plan that 60 percent hydrogen (garble) is nominally at 102 to 103 (garble). Are we running pretty much nominally or behind or what?

CAPCOM We are about to lose you here over Antigua. We will pick you up at Ascension at 56.

PAO Apollo Control Houston here 98 hours and 49 minutes into the flight. A most interesting pass. You heard Wally Schirra describe an unusual phenomena, apparently the crew has noted earlier in the flight, and at one point Schirra described it as almost an atmospheric effect on the spacecraft. That's at 90 miles out, nautical miles, altitude and of course, that communication has triggered a lot of people to get busy and look charts and look at data. I can imagine they will be busy for some time trying to run the answer to that one down.

APOLLO 7 COMMENTARY, 10/15/68, GET: 984600 (CDT 12:48p) 325/2

PAO

This is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 985630 (CDT 12:58) 326/1

PAO This is Apollo Control Houston, 98 hours, 56 minutes into the flight and through Ascension, we expect contact any moment. We'll standby and keep the line open.

CAPCOM Apollo 7, Houston through Ascension.  
Apollo 7, Houston through Ascension.

SC Roger.

CAPCOM Okay, your line is clear. Wally, on this pitch rate, it would help us out a little bit, we could get a little bit more data, if you would put your GDC on FPAI no. 1.

SC What we had, was right at 90 degrees. We're only locked into a dead band now, Jack. We're right about - fixed up at 090, straight up.

CAPCOM Okay, copy. We get better data on that pitch rate for - on telemetry, if we can put the GDC on FPAI no. 1.

SC I see, okay. Next time we send, we'll do that.

CAPCOM Okay, and - .

SC It appears, that apparently, we had the spacecraft pointed straight up, the command on the X-axis this morning, away from the earth on the radio.

CAPCOM You say that's when it occurred, when the X-axis was pointed away from the earth.

SC That's the way it was this time, and that's the way it seems to be in the past.

CAPCOM Okay, real fine, that gives us a good clue.

SC It's not vibrated around now.

CAPCOM Okay, has it quit now Wally?

SC It's (garble) now about 140 degrees, vertical.

CAPCOM Okay, real fine, and relative to Walt's question on the hydrogen usage, we figure you're about 1 lb. above nominal.

SC Roger, and we look like we are even better off with oxygen.

CAPCOM That's affirmative.

CAPCOM Apollo 7, Houston. One minute LOS Ascension. Tananarive at 99 plus 13.

SC Roger, Jack. Did the Doctor ever say anything about using this antibiotic as a preventative medicine up here?

CAPCOM Standby. Okay Walt, on that question, there is really not any need to use - that is the antibiotic, they don't feel that would help or cure a cold.

SC Well, so far, I've been able to resist getting one, but if there's someday I could hold it off, I would just as soon take the pill, or do you want me to

APOLLO 7 COMMENTARY, 10/15/68, GET: 985630 (CDT 12:58p) 326/2

SC go and catch it, then treat it.  
CAPCOM Okay, we'll pick you up over Tananarive.  
PAO This is Apollo Control Houston, 99 hours,  
4 minutes into the flight. You heard Walter Cunningham  
asking about taking an antibiotic for himself in order to  
prevent his getting a cold. At least that's the way we  
understood it and the Doctor advised that would not help  
prevent him from contacting the same cold that bothered  
Donn Eisele and Wally Schirra today. This is Apollo Control  
Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 991655 (CDT 1:19p) 327/1

PAO Apollo Control Houston, we're 99 hours, 16 minutes. We had a brief chat with the crew by Tananarive a few minutes ago, and from the tone of the conversation with Walt Cunningham, it sounded to us like things were quieting down in order to let CMP Donn Eisele get to sleep. He's, according to the flight plan, about 1-1/2 hours to 2 hours into his sleep cycle. At this point, Cunningham did report that the Spacecraft was powering down and here's the way he reported it.

CAPCOM Apollo 7, Houston through Tananarive.  
SC Roger, Jack, you're 5 by we're an hour  
down in the drifting configuration.  
CAPCOM Roger, copy that. We'll be standing by.  
SC We're going to activate the ...

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 993540 (CDT 1:37P) 328/1

PAO This is Apollo Control Houston 99 hours 35 minutes. Over Carnarvon a few minutes ago we had this conversation.

CAPCOM Apollo 7, Houston through Carnarvon.  
SC (garbled)  
CAPCOM Roger, fine. We've been going over some the results of the keying test we did over the states. It leads us to two questions we would like to ask. One was the PMP in AUXILIARY?  
SC Negative.  
CAPCOM And the next question, was the keying done with the panel switch or the mike button?  
SC I keyed with the mike button on my control head.  
CAPCOM Okay, thank you.  
SC (garbled)  
CAPCOM Go ahead.  
SC You see, we powered down and (garbled)  
CAPCOM Would you say again. We didn't copy,  
Walt.  
SC I said I've got the SPS powered down.  
CAPCOM Roger.  
SC The SPS logic button 3 data (garbled)  
We've added to the rest.  
CAPCOM Okay, stand by. We'll get you the answer.  
SC Roger, mark 15 clicks of water for the CMP.  
CAPCOM Okay, will do.  
SC And Jack, when you get a chance would you get an update on the RCS profile I have onboard?  
CAPCOM Okay and work.  
SC Thank you.  
CAPCOM Walt, your RCS reading on your plot will be 714.  
SC Roger, 714.  
CAPCOM Apollo 7 (both transmitting at once)  
SC when we operate the DMP on AUXILIARY we seem to be (garbled) pretty good check on that aren't we?  
CAPCOM I'm sorry, Walt, I was transmitting something to you at the same time. Can you say again?  
SC Roger. We have coming up over Carnarvon CMP powered off fully with an S-band check. Are we already satisfied for those by an earlier operation in AUXILIARY for some time? (garbled) asking do you want to continue that (garbled) auxiliary and what were you saying when I transmitted?  
CAPCOM Okay, Walt. We do want to put the PMP to AUXILIARY. That puts us in our PCM down on the FM.

APOLLO 7 COMMENTARY, 10/15/68, GET: 993540 (GDT 1:37P) 328/2

SC (CAPCOM talking also) a long time (garbled)  
like that?

CAPCOM Walt, we'll hit you at Guam at 99 plus 39  
and Hawaii at 99 plus 53.

SC Okay, and give me a call if you want  
PMP powered AUXILIARY.

CAPCOM We want the PMP on AUXILIARY. That's  
just the configuration for the test.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 993908 (CDT: 1:40p) 329/1

CAPCOM Roger; 55. We would like you to put  
your B power to OFF. I didn't copy that last one. Say again.  
SC Apollo 7, Houston; looks like we're getting  
about 2 by on the com here at Guam. After the pound test  
at Hawaii, we would like to have you comment briefly on the  
results of the scanning telescopes; star count. Star count.  
CAPCOM Apollo 7, Houston. I read your fly by  
Walt. And relative to Wally's question on a SCS logics bus,  
it will save us about two amps and you can turn that switch  
off if you like.  
SC Okay, we'll turn it off; it'll cool it  
down in here a little bit; it's been getting warm and sunny.  
CAPCOM Roger; copy. I said I would. Roger,  
copy that. You're 1 minute LOS Guam. Hawaii at 99 plus 53.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 995450, (CDT: 1:57p) 330/1

PAO                    And this is Apollo Control, Houston, 99  
hours, 54 minutes. The first call has gone up to 7 through  
Hawaii.

CAPCOM                Apollo 7, Houston through Hawaii.

CAPCOM                Apollo 7, Houston through Hawaii.

PAO                    Apollo Control, Houston. We're - you  
are getting an earful of why we are taking the circuit down.  
We'll try again when we get to California.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 995810 (CDT 2:00p) 331/1

PAO This is Apollo Control Houston. We have good com now and Schirra is going to give us a window report.

SC The chaff that's on the perimeter is fogging around the perimeter. It's a (garble) impression about (garble) right now about 1/2 inch into the perimeter, that is on a good clear window. The APS window (garble) shortly after we had insertion into orbit. Large condensation now in the inner surface of the inner pane and the center of the window, a circle about 1/2 inch in diameter, looks like snowflake crystals all across it, actually opaque. Window number 4 (garble). Right around the edge, are the - inner surface of the inner pane - outer pane towards the -Z axis primarily, including from the edge (garble).

CAPCOM Okay, Apollo 7, Houston. We lost you on the handover there, we will pick you up with the last half, starting with window 4, when we good contact with the Huntsville.

SC (garble)

CAPCOM Roger, we copy. Window 3, we caught all - (garble) to give us window 4.

SC (garble)

SC Do you read Houston?

CAPCOM Okay, read you 5 by. We are ready to copy window 4.

SC Okay, just to get it on the report, we just broke 100 hours.

CAPCOM Roger, we got that.

SC Okay. Window number 4 has started to cloud, it's on the edge and working its way inward. The worst spot now 3/8 to 1/2 -

CAPCOM Okay, copy that.

SC Okay (garble) photography. The window to the side to starting to get some kind of a film on the inner surface of the outer pane, but you have to look pretty close to see it. It is still perfectly clear for photography. Okay, windows 2 and 4 are all sufficient for star work but the other ones are not.

CAPCOM Okay, copy that.

SC Jack, yesterday was the fifth anniversary of the entry of D. Eisele and W. Cunningham into the program.

CAPCOM We copy that anniversary.

SC Is it safe to (garble)

CAPCOM Say again.

SC (garble)

CAPCOM We didn't copy that, Wally, Could

you give us window number 1 again?

SC I think the window is getting worse, clouding the vision due to the over board dump. The particles depending on the spacecraft attitude seemed to bounce off the (garble) over. Do you read?

CAPCOM Okay, got it.

SC My question was, is Deke Slayton still in house?

CAPCOM Okay, our comm with the Huntsville is deteriorated. We're not reading you too well. We'll pick you up over the States.

SC Okay.

CAPCOM Apollo 7, Houston.

SC Roger, loud and clear.

CAPCOM You're loud and clear too. Would you get your PMP switch to normal. And then we would like to have you configure for the relay mode.

SC Reger.

SC Would like you to read out GBC versus

CMC.

CAPCOM Apollo 7, Houston. Are you configured for the relay test here at Guaymas.

SC Apollo 7, do you read?

CAPCOM Roger, Apollo 7, do you read Houston?

SC Houston, Apollo 7, over.

CAPCOM Go ahead.

SC We haven't configured yet Houston.

CAPCOM Roger, copy. I understand you have not configured for the relay test.

SC Roger, I haven't had the cue yet.

CAPCOM Okay, we can put your PMP power switch to normal and configure for the relay test.

SC Roger, confirm. Power PMP normal and is configured for relay test I ran out of it in order to get the contact with you again. I'm at duplex A now and continue to relay.

CAPCOM Roger, I understand Apollo 7, you're configured for relay test. We're now performing the relay test. Roger, Apollo, Houston, counting 1, 2, 3, 4, 5 - 5, 4, 3, 2, 1 performing the relay test.

CAPCOM Houston performing the relay test - 1, 2, 3, 4, 5 - 5, 4, 3, 2, 1.

END OF TAPE

APOLLO 7 COMMENTARY 10/15/68, GET: 1000910 (CDT 2:14P) 332/1

CAPCOM This is Houston performing the relay  
test. 1, 2, 3, 4, 5, 6, 7, 9, 9, 8, 7, 6, 5, 4, 3, 2, 1.

CAPCOM Apollo 7, Houston

SC Roger, we copied your relay mode check.

How did it do?

CAPCOM Well, there is some question on it. Can  
you confirm that you were in the relay mode per your Com  
slide rule?

SC That's affirmative.

CAPCOM Okay, fine, thank you.

SC Did it work or did it not?

CAPCOM Ground didn't copy the relay, so we had  
some question there.

SC Roger we read you.

SC Magazine S is 69 west coast of Southern  
Mexico.

CAPCOM Okay, copy that.

END OF TAPE



APOLLO 7 COMMENTARY, 10/15/68, GET: 1004700 (CDT 2:49p) 334/1

PAO This is Apollo Control, 100 hours, 47 minutes. Apollo 7, on the night side of this revolution coming up on the station at Tananarive now.

CAPCOM Apollo 7, Houston. Apollo 7, Houston through Tananarive. Apollo 7, Houston. Apollo 7, Houston. Apollo 7, Houston.

CAPCOM Tananarive M and O, Houston CapCom, are we getting out to you?

TAN M/O Houston CapCom, Tananarive M and O. Affirmative, they are copying you. They are very poor, very poor.

CAPCOM Apollo 7, Houston transmitting in the blind. We're trying to find a piece of the data for the radiator degradation test around 96 hours. This was when we were considering terminating the test and Walt can you confirm tape recorder ON at that time? Tananarive M and O, did you copy?

TAN M/O Tananarive did not copy. Houston CapCom. Tananarive M and O, they Rogered.

SC (garble) right on the minute.

CAPCOM Roger, understand you did have it ON. Thank you.

SC That's affirmative.

PAOCAPCOM Apollo 7, Houston. One minute LOS. Mercury at 11.

PAO This is Apollo Control at 100 hours, 54 minutes. Tananarive has LOS now. Next station to acquire will be the tracking ship Mercury at 101 hours, 11 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1011130 (CDT 3:15p) 335/1

PAO This Apollo Control, 111 hours and 11 minutes into the mission. Apollo 7 coming up on the Mercury now. Guam has overlapping coverage here, but Guam reports their unified S-band antenna is not operative this pass and Guam will have VHF capability only.

CAPCOM Apollo 7, Houston. Mercury standing by.  
SC Roger. Say, Ron, I wanted to confer that we rechecked our switches at the relay mode and everything is considered appropriate (garble)

CAPCOM Apollo 7, Houston.  
SC Apollo 7, Houston, do you read us?  
CAPCOM I missed part of your comments there, but the relay mode worked okay.

SC Oh, it did work okay? Jack indicated that the U S-band wasn't conclusive.  
CAPCOM No, that was our mistake, it worked okay.  
SC Okay, and I understand we have the same check coming up in a couple of hours?

CAPCOM Say it again. What check?  
SC It will be the same thing coming up for a new check over Hawaii in a couple of hours and I wanted to confer that we did turn on the tape recorder for all of the data points, and one of them we were 3 or 4 minutes late on the test, but the one in question that you asked about I believe we turned on right on the dot.

CAPCOM Okay, Rog. Thank you.  
CAPCOM Apollo 7, Houston. (garble)  
SC We're on the frame 75 magazine (garble) 0. we're in the sunrise (garble)

CAPCOM Say it again, Wally. Not too clear there.  
SC We're in 75 magazine back 0 (garble) 0 (garble) station at sunrise (garble) by ivory.

CAPCOM Roger, copy.  
PAO Apollo Control at 101 hours 20 minutes  
Guam has LOS now. Hawaii will acquire in about 8 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1012840 (CDT 3:30 p) 336/1

PAO This is Apollo control, 101 hours 28 minutes, Apollo 7 at Hawaii now. There's overlapping coverage with the tracking ship Huntsville and then into the California station and then into the Guaymas Mexico station. We'll stand by for communication during these passes.

CAPCOM Apollo 7, Houston, one line flight plan update.

SC Go ahead.

CAPCOM Roger, at 102 plus 20 delete CRYO test at this time.

SC Roger, we did it earlier, at 50 percent.

CAPCOM Roger, we're estimating 60 - you'll have about 60 percent O2 at about 134 hours something like that. We'll update later on.

SC Roger, the O2 will be done later, you mean.

CAPCOM That's affirmative.

SC Very well, we can just have a standing flight plan item on that, it's supposed to be done at 60 percent so we'll just do it when it get to 60 plus or minus 5.

CAPCOM Sounds good.

SC Can we have a chart update too?

CAPCOM Say again.

SC A chart update.

CAPCOM Wilco, standby.

CAPCOM Apollo 7, Houston, I have your map update.

SC Go ahead.

CAPCOM Roger, rev 64, GET 101 plus 06 plus 52, longitude 106.8 east, right ascension 04 plus 54.

SC Roger, thank you.

CAPCOM Apollo 7, Houston, we found the data in question on the RAD test.

SC Roger, thank you.

CAPCOM Huntsville two way log signal, too weak for valid range.

CAPCOM Huntsville two way log, valid range.

PAO Apollo control at 101 hours 37 minutes this is the point in the flight plan where the crew is photographing the windows in an attempt to record the deposits that are on the windows. We'll continue to stand by through this pass.

SC Houston, Apollo 7.

CAPCOM Houston, go.

SC This is CMP, (garble) the waters on, the LMP (garble).

CAPCOM Awful garbled, Walt, say again.

APOLLO 7 COMMENTARY, 10/15/68, GET: 1012840 (CDT 3:30 p) 336/2

SC

This is the CMP. (garble).

CAPCOM

I can't read you here, we'll pick that

- pick you up in Guaymas in about 2 minutes.

PAO

This is Apollo control 101 hours 39 minutes, flight director Glynn Lunney has left the control center now and we're estimating the news conference in approximately 10 minutes.

CAPCOM

Apollo 7, Houston, say again your last

translation now.

SC

Roger, Ron, I was just having some water  
15 clicks for LMP and 30 clicks for the - excuse me 15  
clicks for the CMP and 30 clicks for the LMP.

CAPCOM

Roger, thank you.

END OF TAPE

APOLLO 7 COMMENTARY, 10/14/68, GET: 1014040 (CDT 3:45p)337/1

CAPCOM

Thirty seconds LOS Tananarive at 20.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1022210 (CDT 4:25) 338/1

PAO This is Apollo control 102 hours 22 minutes, Apollo 7 is over Tananarive. There has been no conversation yet, Capcom Ron Evans put in a call a few moments ago and informed them we were standing by.

CAPCOM Apollo 7, Houston, 2 minutes to LOS, Tananarive, Mercury at 43.

PAO. Apollo control at 102 hours 29 minutes, Tananarive has LOS now. We're in a quiet time in the flight plan, we had nothing to pass up to Apollo 7 during this pass and obviously they did not feel the need to communicate with us. The next station to acquire will be the Mercury at 102 hours 43 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1024400 (CDT 4:45 p) 339/1

PAO This is Apollo control at 102 hours 43 minutes and we'll monitor the Apollo 7 pass over the tracking ship Mercury now.

CAPCOM Apollo 7, Houston, Mercury standing by.  
SC Roger, loud and clear.  
CAPCOM Roger, same.  
SC Houston, Apollo 7.  
CAPCOM Houston, go.  
SC Roger, you can give Walt credit for 12 clicks of water and give me 3.  
CAPCOM Wilco.  
SC And the water's tasting very good, so we'll chlorinate one more time and see how bad it gets, and let that be the last dose.  
CAPCOM I understand what you're saying.  
SC Okay, thank you.  
CAPCOM Apollo 7, Houston.  
SC garble.  
CAPCOM Apollo 7, Houston, you're unreadable.  
SC Don't forget that we should chlorinate every other day, so we'll see how that works out.  
CAPCOM ARIA.  
SC Is the ARIA in the relay mode.  
CAPCOM Walt, thats affirmative, reconfigure for relay modes prior to 103 plus 02.  
SC Wilco. Okay we'll be on duplex A as we go over the hill now.  
CAPCOM Affirmative. And Walt, we'd like you to cycle 02 tank two fans, on for five minutes then off.  
SC Affirmative.  
CAPCOM Apollo 7, Houston, opposite OMNI.  
SC Ron, we just made a big discovery, I just turned the 02 fans number two down on and it started by DET in the lower equipment bay.  
CAPCOM Beautiful.  
SC Did you read that, Ron.  
CAPCOM Affirmative, DET in the LEB started when you turned the fans on.  
SC That's correct.  
SC Always excitement up here. That lends credence to the theory that it does touch the spacecraft.  
CAPCOM Say your last comment, Wally.  
SC That lends credence to the theory that (garble) do all touch the spacecraft.  
CAPCOM Roger, we we'll read it back on the tape, I still didn't get you.  
CAPCOM Apollo 7, Houston.  
SC Go ahead.

APOLLO 7 COMMENTARY, 10/15/68, GET: 1024400 (CDT 4:45p) 339/2

CAPCOM

Opposite OMNI.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1025040 (CDT 4:52P) 340/1

CAPCOM Apollo 7, Houston, 30 seconds LOS. Hawaii  
at 02.

SC Roger.

PAO Apollo Control at 102 hours 51 minutes.  
The Mercury has LOS now. During the pass over Hawaii at  
103 hours 02 minutes the voice relay test will be run again.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1030215 (CDT 5:05p) 341/1

PAO This is Apollo Control at 103 hours  
2 minutes. Apollo 7 is at Hawaii now. We'll monitor this  
pass.

CAPCOM Houston.  
SC Roger, we read you loud and clear.  
CAPCOM Rog. You're a little weak.  
CAPCOM Apollo 7, Houston. Would you like to  
try it again? Do you read?  
CAPCOM Apollo 7, Houston.  
CAPCOM Apollo 7, Houston.  
SC Roger.  
CAPCOM Roger. You're not coming back very well.  
Break Hawaii M&O. S-Band uplink inhibit.  
CAPCOM Apollo 7, Houston for a backup voice  
check. I'm trying to bring it up to you on 259.7. You should  
be transmitting my voice back down to Hawaii on the U S-B  
link.

CAPCOM Apollo 7 to Houston CAPCOM, transmitting  
for a voice relay mode. Transmitting up to you on 259.7.  
My voice should be coming back through the spacecraft and  
back down to Hawaii on the U S-B.

CAPCOM Apollo 7, Houston request that telemetry  
command to reset momentarily and in normal at LOS.  
SC Roger, do you read Ron?  
CAPCOM Affirmative. Loud and clear now.  
SC Okay, you're transmitting okay. Did you  
get a relay check?  
CAPCOM I still haven't got a reading here yet.  
I think it's okay.  
SC Okay, we read you. I'll call. Hello,  
this is Wally. Hello this is Wally.

CAPCOM Go ahead.  
SC Dis you call us a COMSAT?  
CAPCOM A time check?  
SC No, did you call us a COMSAT?  
CAPCOM I can't understand. Say it again, Wally.  
SC Did you call us a COMSAT?  
CAPCOM Rog. You are a COMSAT.  
SC Roger.  
CAPCOM I'm a little deaf.  
SC Huntsville (Garble) down range.  
CAPCOM Apollo 7, Houston. 1 minute LOS.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1031230 (CDT: 5:15p)342/1

CAPCOM            Apollo 7 Houston, one minute LOS break,  
be advised voice relay quality was good. Apollo 7 Houston  
at Tananarive at five four.

PAO                This is Apollo Control at 103 hours, 13  
minutes. The Huntsville has LOS now. That ship had over-  
lapping coverage with Hawaii. The voice relay test was  
successfully conducted over the Hawaii station. This is the  
test that simulates transmitting to the LM, the lunar module  
through the command module. The voice relay quality was  
reported as good. The next station to acquire Apollo 7 will  
be Tananarive at 103 hours, 54 minutes. This is Mission  
Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1035450 (CDT 6:00p) 343/1

PAO This is Apollo control at 103 hours  
54 minutes, Apollo coming up on the Tananarive station now,  
in its 66 revolution. We'll stand by to monitor this pass.

CAPCOM Apollo 7, Houston, through Tananarive,  
standing by.

CAPCOM Apollo 7, Houston, standing by.

CAPCOM Apollo 7, Houston, through Tananarive.

CAPCOM Apollo 7, Houston, join Tananarive  
through Mercury at 18.

PAO This is Apollo control, 104 hours and  
2 minutes, Tananarive has LOS now. There was no conversation  
during that pass. The tracking ship Mercury will acquire  
at 104 hours 18 minutes. This is mission control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1041805 (CDT 6:20P) 344/1

PAO This is Apollo Control 104 hours 18 minutes and the Mercury has acquired Apollo 7.

CAPCOM Apollo 7, Houston. Apollo 7, Houston. Mercury M and O, Houston Capcom, are we getting out to you? Apollo 7, Houston. Apollo 7, Houston. Transmitting in the blind. Flight plan update at 106 plus zero zero 02 fuel cell purge. Apollo 7, Houston. Apollo 7, Houston. LOS Mer- Hawaii at 36.

PAO This is Apollo Control 104 hours 25 minutes. Mercury has LOS now. We were unable to establish voice contact with the Apollo 7 through this pass. However, we were getting good telemetry and it shows that the spacecraft looks good according to the flight controllers here in Control Center. Hawaii will acquire at 104 hours 36 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY 10/15/68, GET: 1043600 (CDT 6:40p)345/1

PAO This is Apollo Control at 104 hours, 36 minutes and Hawaii is acquiring Apollo 7.

CAPCOM Apollo 7 Houston through Hawaii.  
Apollo 7 Houston through Hawaii. Apollo 7 Houston. Apollo 7 Houston. Apollo 7 Houston.

SC This is Apollo 7, do you read me?

CAPCOM Rog, read you loud and clear now.

SC Okay, have you tried to contact the Mercury?

CAPCOM Affirmative.

SC Sorry about that, I didn't get back in to the right configuration after that reel check.

CAPCOM Yeah, we were switching around there and were going to try that in the air to Hawaii if we didn't catch you. Okay, Wally, I've got a log data for you and also would like some onboard readouts. Apollo 7 Houston, do you read? Apollo 7 Houston. Apollo 7 Houston. Apollo 7 Houston. Apollo 7 Houston. Apollo 7 Houston, we'll pick you up in the Mercury at 104, belay that, at 105, 52.

PAO This is Apollo Control, 104 hours, 42 minutes. Hawaii has LOS now. We didn't have too much communication there, apparently for a while the spacecraft was still in that relay test configuration. We talked to them briefly but then we had some land line problems in the communications network. Apollo 7 now starts a long sweep where it will be out of voice contact. The next station to acquire that's capable of voice is the tracking ship Mercury at 105 hours, 52 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1050630 (CDT 7:10p) 346/1

PAO                      This is Apollo Control at 105 hours  
06 minutes. Apollo 7 has just started its 67th revolution.  
We're out of range of tracking stations until we get to the  
Mercury. We will get some telemetry at Pretoria, but no  
voice capability there. We estimate acquiring at the Mercury  
at 105 hours 52 minutes. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1053000 (CDT 7:30p) 347/1

PAO                      This is Apollo control at 105 hours  
30 minutes, Apollo 7 is over Africa on its 67 revolution.  
We've just ended the period set aside in the flight plan for  
the commander and the lunar module pilot to eat and the  
command module pilot is still in his sleep period. We've  
been out of voice contact with Apollo 7 since the Hawaii  
station. We'll acquire at Mercruy at 105 hours 52 minutes.  
This is mission control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1055130 (CDT 7:55p)348/1

PAO This is Apollo Control, 105 hours and 51 minutes, Apollo 7 coming up on the Mercury now. We'll listen to this pass.

CAPCOM Apollo 7 Houston through Mercury.

SC Roger, loud and clear

CAPCOM Roger, the same, Walt

SC We're going to take the block data this pass?

CAPCOM Roger, block data to follow. Zero 69 dash three Charlie, plus 190, plus 1300, 108 plus 47 plus 28, 2888, 070 dash Alpha Charlie plus 043 minus 0230, 109 plus 37, plus 434082. Zero 71 dash Alpha Charlie, plus 128 minus 0320111 plus 10, plus 333808, 072 dash two Alpha plus 255 minus 0270112 plus 48 plus 123484, 073 dash one Bravo plus 210 minus 0615114 plus 13 plus 043590, 074 dash one bravo plus 279 minus 0645115 plus 48 plus 123455, Houston over.

SC Roger, I read that. Can you get someone to check our main 02 rates?

CAPCOM Roger, we're standing by.

SC Okay, Roger, this (garbled) 69, 0693 Charlie plus 190 plus 13001084728, 1888070 plus Charlie plus 043 minus 230, 1093743, 4082071 Alpha Charlie plus 128 minus 0320111 plus 10 plus 333808, 0722 Alpha plus 255 minus 0270 11248123484, 0721 Bravo plus 210 minus 0615, 11413043590 0741 Bravo plus 279 minus 06451154812 (static)

CAPCOM Apollo 7 Houston, your read back is correct, correct pressure now is 104.

SC Roger, I'll switch rings and give another one.

CAPCOM 103

SC 103, we are GO on ECS readout and we've just changed our cannister now.

CAPCOM Roger, and flight plan update lock and fuel cell 02 purge at 106 plus 00.

SC Roger, are we coming up LOS?

CAPCOM Roger, about one minute to LOS. I can give you a figure 3 dash 1 on your RCS update, if you want.

SC Go ahead

CAPCOM Roger, at 104 hours you have a total of 715, your SCS red line is 583 your damp red line 520, hybrid red line 247 and those are points to plot on your curve.

SC Very good (garbled)

CAPCOM Yeah, it's looking good. Be advised that quad A, as far as the quad red line, is just right on the SCS red line, all others are in good shape.

SC Rog, what happened to your transition of water? Did you break up on the land line?

APOLLO 7 COMMENTARY, 10/15/68, GET: 1055130 (CDT 7:55p)348/2

CAPCOM Affirmative. Broke up on the land line.

SC Okay, standing by for Redstone.

PAO This is Apollo Control at 105 hours, 58 minutes. Mercury has LOS now. We updated the crew on this pass with what they call the block up date. That's reentry information the flight crew would need if it should have to reenter during the next few revolutions when it's essentially off the tracking range. We gave them the information through rev 74. We also gave them a report on their total RCS propellant has 715 pounds remaining and that gives us plenty of capability for the backup modes of deorbit using the RCS system instead of the service propulsion system if that should be necessary. Wally Schirra reported that they had just completed changing the lithium hydroxide cannister there are two of these cannisters in the system, one is changed every 12 hours, the lithium hydroxide removes the carbon dioxide from the atmosphere. Apollo 7 will miss the Guam station this time also the Hawaii station. The next station to acquire is the tracking ship Redstone in the South Pacific, acquisition there at 106 hours, 24 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1062400 (CDT 8:25 PM) 349/1

PAO Apollo Control at 106 hours 24 minutes.  
As Apollo 7 comes within range of the Redstone tracking ship,  
Donn Eisele should be awake and perhaps eating breakfast.  
Wally Schirra and Walt Cunningham should be beginning their  
sleeping period. We'll stand by through this pass.

CAPCOM Apollo 7, Houston through Redstone.  
SC Roger, Houston, five by five.  
CAPCOM Rog. (garble) Walt, I have some onboard  
readouts I'd like to get.  
SC Go ahead.  
CAPCOM Roger. SPS fuel and Oxidizer quantity  
and the oxidizer unbalanced, if any.  
SC Our (garble) is not working I was told  
so I haven't paid any attention to it, but I show the oxidizer  
unbalanced reading of minus 300 or decreased 300 and it kinda  
jumps around during during a burn, and I don't think it means  
anything at all. The SPS quantity is remaining 17.15 percent  
oxidizer, 18.2 percent fuel. Over.  
CAPCOM Roger, copy, and your service module  
RCS propellant quantity.  
CAPCOM And your bat C volts, while you're over  
there.  
SC (garble)  
CAPCOM I missed it. Say it again.  
SC Okay, the (garble) gage is about 51 per-  
cent.  
CAPCOM Roger.  
SC Bat C, 56 percent.  
CAPCOM Roger.  
SC Bat D, 62 percent.  
CAPCOM Roger.  
SC (garble) we don't count.  
CAPCOM Still clear.  
CAPCOM Your bat C volts and your systems test  
meters 5 and 6A through D, when you get a chance.  
SC Roger. Bat bus A is reading 36 volts;  
Bat bus B is reading 36.2 volts; 5C is 5 volts; 5D is 5 volts  
6D is 5 volts; 6C is 5 volts; 6B is 5 volts; 6A is 5 volts.  
CAPCOM Roger, copy. All systems tests are  
5 volts, and Bat C we still need.  
SC Okay, Bat C coming. Bat C shows 36.3  
volts and our present plans are not to heat the command mod-  
ule RCS in our deorbit.  
CAPCOM We concur, so far.  
SC Any late breaking news in Houston, Ron?  
CAPCOM Say it again.  
SC What's the latest news in Houston?  
CAPCOM I have Lima Sierra for you.  
SC Well, go ahead (garble)

APOLLO 7 COMMENTARY, 10/15/68, GET: 1062400 (CDT 8:25 PM) 349/2

CAPCOM Roger. Lima Sierra, 072/061, and I have  
a Sierra Fox Trot at 075.

SC Sierra Fox at 075, (garble) Lima Sierra  
072/061.

CAPCOM Roger.

SC 6572/65.

CAPCOM Apollo 7 - Apollo 7, Houston, request  
a cycle 02 fan for 5 minutes in auto

SC Okay. Ron, we've been reading every one  
in auto, is that yours too, Ron?

CAPCOM We started out the other way and then  
Donn had it the other way,

SC It's in auto and the other one is cycled  
on your callouts, right?

CAPCOM That's affirmative, so you have tank 1  
in auto and tank 2 fans cycling now.

SC (garble) 5 minutes.

SC Purge on time.

CAPCOM Apollo 7 Houston (Garble)

CAPCOM 7, Houston. We have 1 minutes to LOS.  
Our 02 is about 63 pounds above the nominal flight plan at  
this time and the H2 is about a half pound above the nominal  
flight plan. So we're in good shape.

SC Very good.

PAO This Apollo Control at 106 hours 31 min-  
utes. The Redstone has LOS now. Obviously, the commander  
and the lunar module pilot have not settled down for the night  
yet, even though their sleep period started at 106 hours on  
the flight plan. The majority of this pass was devoted to  
updating and to getting onboard readouts of various systems  
including the SPS propellant quantities, the service module  
RCS propellant quantities and battery voltage readings. Next  
station to acquire will be Ascension. At 106 hours 50 minutes,  
this is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1065010 (CDT 8:55p) 350/1

PAO This is Apollo control at 106 hours 50 minutes, Apollo 7 is approaching range at Ascension now, we'll stand by there.

CAPCOM Apollo 7, Houston, Ascension standing by.

SC Roger, thank you Evans any more local news or any reports.

CAPCOM Roger, I can give you, just like the end of the mission now, predicted the word I have, 25 percent O2 up, and about 6.8 percent H2 up.

SC Roger, I understand, that sounds good. It about what I predicted on earlier (garble) isn't it.

CAPCOM I think so. On the fuel cells performance is right down the middle, purging is turning out nominal, looks like we'll plan to purge O2 immediately prior to the SPS burn and this should improve the low charging characteristics between the fuel cell and the battery.

SC Roger, I understand and is the SPS the left burn nominally what it is in the flight plan.

CAPCOM The SPS burns are still per flight plans, yes.

SC Roger, thank you. Did they tell you the purging water carriage at SPS burn, too.

CAPCOM Say again, Wally.

SC I don't know whether you got the report or not but there's vast water collecting all over the plumbing on the ECS, and it forms rather large blobs that we're going to have to take off before getting a burn going again. That's it, Apollo.

CAPCOM Roger, I understand you want to collect all the water at one place.

SC Yeah, that on the aft bulkhead.

SC Burn check list. Did you get to see the TV picture where the wall-to-wall (garble) is kind of sharp today.

CAPCOM Yes, we did, it came through real good.

SC Yes, how has that on board TV been showing up could you detect our motion or are we moving too fast or what?

CAPCOM No it's real good if you have a real fast movement, you get a little bit of a blur, but just in the floating movements it turns out real - real fine, it's amazing, it's much better than any thing I've ever seen in ground testing.

SC That's good. Is this being taped during the (garble) prepared as so we can see it.

CAPCOM Yea, it's taped.

SC Yea, okay.

APOLLO 7 COMMENTARY, 10/15/68, GET: 106510 (CDT 8:55p) 350/2

SC Donn said he (garble), but six years ago he got to me that way.

CAPCOM Missed that Wally.

SC Six years ago he asked me that question, only I had a tape on board and I was about three minutes out on an Atlas.

CAPCOM Okay.

SC You still there, Ron.

CAPCOM Affirm.

SC What's the status of our tape recorder, have you dumped it recently.

CAPCOM Roger, the last two passes we had over the Mercury it wasn't quite as good, we're checking it out at Redstone now it was good up until that time.

SC Roger, how about a chart update if you have time.

CAPCOM Roger. Put your tape recorder forward switch in forward.

SC It is.

CAPCOM Roger, and here's your flight plan update.

SC Go ahead.

CAPCOM Rev 68, GET is node 107 plus 01 plus 55 longitude 15.9 east right ascension 04 plus 47.

PAO We have LOS at Ascension, don't know whether all that last update got up there or not. During this pass we informed the crew of the predictions that at the end of the mission we'll have 25 percent of the oxygen left 6.8 percent of the hydrogen remaining. We also told them that the fuel cells were performing well. There was a discussion of the water condensation on the environmental control system plumbing, the crew pointed this out during the television transmission this morning, and there was considerable discussion of the quality of the TV and the crew seemed to want confirmation that it was being taped on the ground. They obviously want to take a look at it when they get back. Next station to acquire will be the Mercury at 107 hours 26 minutes. This is mission control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1072630 (CDT: 9:30p) 351/1

PAO This is Apollo Control at 107 hours  
26 minutes, and the tracking ship Mercury is about to acquire  
Apollo 7.

CAPCOM Apollo 7, Houston. Apollo 7, Houston  
through Mercury.

SC Got you Houston, loud and clear.

CAPCOM Roger, I have battery status if you're  
ready to copy. Apollo 7, Houston, output on me.

SC Go ahead with the status.

CAPCOM Roger, you presently have three in  
A 32.7, in B 30.2, in C 39.5 amber hours.

SC Roger.

CAPCOM For predeorbit, you will have an  
A 24.8, and B 22.2, and C 39.5 for total of 86.5 amber hours.

SC Roger.

CAPCOM Predicted post finding time will be  
35 hours.

SC Roger, understand Ron. The only thing  
we have on battery charge is supporting the batteries till  
your on a hydra deorbit.

CAPCOM Rog, we concur. You might be interested  
it's believed that we've had a slight change in the battery  
charger characteristics. As a function of altitude sets up  
the charging voltage that the battery terminals is about  
2 to 3 tenths volts lower than normal, and this would account  
for the decreased charging current. We're continuing ground  
testing to better define this anomaly.

SC I thought this was done subsequent to  
our lift-off.

CAPCOM Say again, Wally.

SC You say this was done after we took  
off, Ron.

CACOM That's affirmative.

SC Yeh, it's good work to find it out.

CAPCOM Yeh, right. No additional battery charge  
is anticipated at this time. We recommend minimizing battery  
on time for all burns.

SC That's kind of hard to do, but we'll do  
it.

CAPCOM Roger.

SC (garbled) We're going to wake up and  
get down on watch shortly. He'll be with you on next go.

CAPCOM Roger, understand. Have a good night's  
sleep.

SC Good-night. Ron, did you have PF-5  
system power up. We had it rendered here on the flight plan

here. At about 107, 20.

CAPCOM Roger, it's in there. We're checking on it right now.

SC Can you hold off on it a little yet. If you do, you get it on Donn Eisele at the next Redstone.

CAPCOM Roger, there's no problem there. It's just to run the State vector up.

SC Yeh. I guess I'd like to put the iron on the fire of that battery charge status.

CAPCOM Affirmative, we're still working on it.

SC Okay.

CAPCOM Walt, we've got the 101 backup batteries in Downey, and we're running tests on those tonight.

SC Alright.

CAPCOM Apollo 7, Houston, opposite OMNI.

SC Hold off. Yeh, Ron tomorrow maybe you can add a Baker-tare update to that.

CAPCOM Baker-tare?

SC That's the other one I mentioned to you. Plus you gave me that for the Lima Sierra.

CAPCOM That is after the slant.

SC Oh. Oh, Ron how about the longitude on that chart update, we missed it.

CAPCOM Roger, just a second.

CAPCOM Rog, REV 68.

SC Roger, GO. I mean - 107, 128255, what's longitude.

CAPCOM Roger, longitude 15.9 east. Right Ascension 04 plus 47.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1073838 (CDT 9:49p) 352/1

CAPCOM Right, Ascension 04 plus 47.  
SC Ascension 1070255 is the time, right?  
CAPCOM That's roger, and request Bat C readout,  
again. Missed it the last time.  
SC Bat C is 36.1 or 2.  
CAPCOM Roger 36.4.  
SC 36.2.  
CAPCOM 36.2, Roger.  
PAO This is Apollo Control at 107 hours  
38 minutes. During this pass, we got a rundown on the  
battery power. As you heard, we do not anticipate having  
to charge the batteries again. There is plenty of power  
through the remainder of the mission, plus the capability  
for 35 hours post-landing. The battery charger apparently  
is not charging quite up to specification. It is believed  
this may be the change in characteristics because of altitude,  
and a test to try to resolve this problem will be run tonight  
at the North American Rockwell plant in Downey, California.  
The next station to acquire is the tracking ship Redstone.  
At 107 hours 57 minutes, this is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1075750 (CDT 10:00)353/1

PAO Apollo Control at 107 hours, 57 minutes and the Redstone has just acquired Apollo 7. There is no activity scheduled in the flight plan at this time. We have indications that the pass at Guam that the - that Wally Schirra and Walt Cunningham were going to sleep. We'll stand by through this pass.

CAPCOM Apollo 7 Houston through Redstone.  
Apollo 7 Houston. Apollo 7 Houston.  
SC Hello Houston, Apollo 7, I'm reading you.

CAPCOM Rog. Good morning.  
SC Hello, how are you?  
CAPCOM Now getting along in good shape. Donn, on this begin I think that Walt gave me that Bravo instead Charlie voltage last time, request Batt Charlie voltage.  
SC Okay, stand by one minute.  
CAPCOM Will, go. Okay, I wonder how much it would foul them up if they delayed eating until they were on TV

SC Ron, I read Batt C as 36 volts.  
CAPCOM Rog, I understand Batt Charlie 36 volt.  
SC I think that's down a little, I believe its about 37 since we got up here.  
CAPCOM We concur. Apollo 7 Houston one minute  
LOS Ascension at 23

SC Roger, Ascension at 23 understand.  
PAO This is Apollo Control at 108 hours, 6 minutes. Redstone has LOS. All of the transmissions that time were by command module pilot, Donn Eisele, indicating that Wally Schirra and Walt Cunningham have settled down for the night. Apollo 7 is about to enter its 68 revolution. The next station to acquire will be Ascension at 108 hours, 23 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/15/68, GET: 1082330 (CDT 10:25p) 354/1

PAO This is Apollo control 108 hours 23 minutes into the mission. Ascension has just acquired Apollo 7. We haven't put in a call yet, but we'll stand by to monitor this pass.

CAPCOM Apollo 7, Houston, Ascension standing by.

SC Do you read, Houston.

CAPCOM Roger, loud and clear.

SC garble.

CAPCOM I missed that Donn, say again.

SC Roger, 15 clicks of the water gone.

CAPCOM Roger, got it.

SC Okay. I just had a good, solid 8 hours sleep and I feel pretty good. I've got a physical head cold, but other than that every things going fine.

CAPCOM Okay, sounds good then.

SC My only concern right now is whats going to happen to my ears when we reentry, but I hope by then I'll get over it.

CAPCOM We kind of feel that you will and we hope anyhow.

SC I guess we'll cross that when we come to it.

CAPCOM Rog.

CAPCOM Apollo 7, Houston.

SC Go.

CAPCOM Rog, we've had a little concern about the voice quality on the DSE there the last couple of dumps and what we would like you to do is after this pass go ahead and talk into the tape recorder, mention the time on it and then give us a time at the next station area and we can play it back and check it out that way real good.

SC Roger, you say you want me to record something on the tape and read the time on to it so you can check it next pass, is that right?

CAPCOM Affirmative, and then give us a time that you were talking into it.

SC Okay will do. Ron, I've got some results of a sextant star count we needed about 98 hours.

CAPCOM Roger, ready to copy.

SC Okay, at sunrise - first of all the Moon was in the field of view and thats tends to wipe out a lot of stars, but at sunrise I counted 12 stars at plus 4 two stars plus 8 one star and plus 12 three stars.

CAPCOM Roger, I copy.

SC Then they all went away, except a couple of bright ones right after sunrise, at sunset minus 12 4 minus 8 15 minus 4 30 and at sunset I saw 40 or more.

SC Of course, this was at the other attitude when the Moon was not in the field of view. I could see the constellation Sagittarius very plainly and all the other major stars in the telescope at that time.

CAPCOM Roger.

SC I recommend that we knock off the remaining star count on the basis that we don't need - really need window shades up to get dark adapted because even if you are dark adapted if you look in a telescope infiltrated with light, it ruins it anyway, and the best way to get dark adapted is to put your eyeball up there and leave it there for several minutes.

CAPCOM Okay, I see, so the window shades are not doing you any good, is what you're saying there, right?

SC I think so, yea, I don't think the window shades would help that much.

CAPCOM Okay.

SC It's not the sunlight coming in the windows that keeps you from getting dark adapted anyway.

CAPCOM Roger.

SC I had roughly the same sort of light pattern in the telescope that I had on the earlier test, there was a bright ring around the edge of it and a broad band across the middle of it, and this light pattern didn't disappear (garble).

CAPCOM All right.

SC In fact on that second check come to think of it there wasn't any band across the middle, it was pretty clean scope and I think it had to do just with the respect to the Earth, how close it is and the direction your looking.

CAPCOM I understand.

CAPCOM Donn.

SC Yea.

CAPCOM We never got the sunset - the sunset part of that first star count thing there, if it's convenient in your log, we'll take that.

SC Roger, I understand you did not get the data on the first one.

CAPCOM We got the sunrise part of it, but not the sunset part of it.

SC Roger, at sunset we had thinning going on and it wiped it out completely.

CAPCOM Oh, I see, Okay.

SC There are so many fireflies, snow flakes out there I couldn't see - tell the stars from the flakes.

CAPCOM I understand.

CAPCOM 30 seconds LOS, we'll pick you up at

APOLLO 7 COMMENTARY, 10/15/68, GET: 1082330 (CDT 10:25p) 354/3

CAPCOM Mercury on the hour.  
SC Okay.  
PAO This is Apollo Control at 108 hours,  
32 minutes, very good voice quality that time. Apollo 7  
split the ring of acquisition on ascension pass almost  
directly overhead at ascension. Don Eisele gave a very  
good report on the daylight start count, reported that he  
got a solid 8 hours sleep and that despite the head cold,  
he feels pretty good. The next station to acquire will be  
the Tracking Ship Mercury at 109 hours. This is Mission  
Control, Houston.

END OF TAPE

PAO This is Apollo Control. We are now 109 hours into the mission. The spacecraft has just been acquired over the tracking ship Mercury and the Cap Com is putting in a call to the crew.

SC (cut off)

CAPCOM Roger, loud and clear.

SC Well I put a short test recording on the tape about, well it was 108:44.

CAP COM Roger, copy.

SC That's give or take a few seconds. I think it was 108:33:40 actually.

CAP COM Roger. (pause) Apollo 7, Houston.

SC Go ahead.

CAP COM Rog, Donn. Do you have time to give us a little run down where you found out the best place to sleep is.

SC Yeah, we're still sleeping in the couch space and that seems to work out best. We've tried ... and tried keeping strapped down in the ... range and the latter seems to be better off. You can also sleep in the couches strapped down I guess but if there's more than one person you're kind of in the way. Another problem with sleeping under the couch at least on the right side, I haven't checked the left, but I know on the right it tends to get hot under there for some reason. Not hot, but a little warmer than the rest of the spacecraft. I don't think there's ... situation.

CAP COM Rog, thank you Donn. We copied. Apollo 7, Houston.

SC Hey, you did it.

CAP COM Mr. Eisele.

SC That's right.

CAP COM Donn, what's the word - what's the configuration of your window shades when you have most of them asleep? Do you have most of your window shades up?

SC Ah, negative. We haven't even pulled down a shade the whole flight.

CAP COM Okay.

SC If there seems to be a problem when your asleep, you just bury your head under something down under the couch and you don't even notice the sunlight much.

CAP COM Okay. Let me ask you one other question, strike this out, what about with respect to that telescope and stars in the daytime, can you ascertain anything at all until you have passed the terminator out of the telescope?

SC No, we started out to, ah, you mean coming into sunset?

CAP COM Yeah, in other words doing a P-51 during daytime.

SC Roger. If you lucked out and happen to end up at the optimum position, that is in other words well away from the Earth and also well away from the Sun, I believe that, ah, say five to ten minutes from sunset or sunrise you'd probably could see it. Like last night, at that one setting, ..,there I could have done an alinement but the problem of the P-51 is that we don't have an alignment to start with and you don't know how to place the setting.

CAP COM Yeah. Alrighty real fine.

SC ... got, ah, if you already had an alignment, you'd just rather do a fine align, we could do that okay. (cut out)and I asked the ... sextant daylight.

CAP COM Okay. (pause) Apollo 7, Houston opposite omni.

SC Roger.

CAP COM Alright, LOS Redstone at 32.

SC Roger.

PAO This is Mission Control. We've lost contact now with the spacecraft as it moved over the horizon and out of range of the Guam tracking station. We had overlapping coverage at that pass from the Mercury and the station at Guam, spacecraft passing almost directly overhead both stations. We will be acquiring again in just about 20 minutes at the Redstone in the South Pacific. Here in Mission Control Center at the present time we're in the midst of a change of shift of Flight Director Gene Kranz who will be going off and who will be replaced on the flight director council by Jerry Griffin and at the Cap Com position we'll have Astronaut Bill Pogue taking over from Ron Evans. At 109 hours 14 minutes into the mission, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control at 109 hours, 32 minutes. I have just put in a call to the crew, and we pick up conversations over the Redstone.

SC (garble) Is that better?

CAPCOM Say again, slower, I couldn't read you. All right, disregard. Apollo 7, Houston. How do you read?

SC Loud and clear.

CAPCOM Okay, you're coming in loud and clear. Before we have some quiet targets, I would like to ask you a couple more of questions, Don. When you're in the local horizontal attitude, can you observe these horizons without the rendezvous windows below you?

SC You mean how far along the impact can you see?

CAPCOM Yeah.

SC I don't know. I've never been precisely in that attitude to look. I don't believe you can though.

CAPCOM Okay, well, let's -

SC Now in that stage, Tom, we have never really done any precise local horizontal maneuvers yet.

CAPCOM Okay, well, in the next day or so if you get a chance I wish you would do that so we can get our simulators calibrated. And also out the side windows, the one and side window when you're in local horizontal, if you will just make a pencil mark there, we can then get our simulators calibrated to that.

SC Okay, a good time to do that may be in the land mark tracking, 14 lined up local, horizontal anyway.

CAPCOM Okay, if you can just make a note of that and check because it will sure help us in getting these - you know these quad 30 datas for the simulators and also pass on to the other crews.

SC Okay, will do. Incidentally, the optics of the simulator are pretty realistic. The lines seen through these optics in here are almost identical with respect to star visibility and so on.

CAPCOM Oh, Okay, we're suppose to picture with the telescope what we see in the telescope is about what you got there in flight, Don.

SC That's exactly right. You have to keep your eyeball on there for a while, you see before you can begin to see any stars.

CAPCOM I see.

SC Using the telescope.

CAPCOM Okay.

SC You can see out the windows.

CAPCOM Okay, that is even at night time too?

SC That's right.

APOLLO 7 COMMENTARY, 10/15/68, GET: 1093200 (CDT 11:35) 356/2

SC Houston, Apollo 7.  
CAPCOM Apollo 7, Houston, GO.  
SC Oh, Hi Bill. I just checked the command  
module RCS temperatures and all six of them are pretty good  
50 plus.

CAPCOM Roger, understand. All the CM RC - CM  
RCS temps are pegged 50 plus.

SC That's right.

CAPCOM Okay. Apollo 7, Houston, 1 minute LOS  
Redstone, ascension on the hour.

SC Roger.

PAO This is Mission Control. We've lost  
communications now with the spacecraft. The spacecraft has  
gone over the horizon and out of touch with the Tracking Ship  
Redstone. We continue to have very good communications on  
that pass as we have in the last several passes. All of  
them have been almost directly overhead. This one - a little  
off to the south, actually, of the tracking ship. The  
first part of that pass, you heard Don Eisele advise Tom  
Stafford who is sitting in at the CAPCOM position along with  
astronaut Bill Pogue here in Mission Control Center. He  
found the optics on the spacecraft to be very similar to  
what he experienced in the ground based simulators at  
Cape Kennedy and here in Houston. In the way of logistics  
information we expect that we will be having a change of  
shift press conference in about 10 minutes in the Building I  
news center. The next station that will be acquiring the  
spacecraft - will be the Ascension station and we antici-  
pate we will be recording that pass and subsequent passes.  
We will play those back following the press conference.  
At 109 hours, 42 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1103600 (CDT 12:40) 357/1

PAO This is Apollo Control at 110 hours 37 minutes. We've had a relatively quiet period here at the Mission Control Center since the Press Conference began. One short pass so far, that was over the tracking station on Ascension and we'll play that one back for you in its entirety now and stand by for conversation with the Mercury. The spacecraft just coming into acquisition at Mercury at this time.

CAP COM Apollo 7, Houston through Ascension.  
SC Ah, Rog, Bill, Apollo 7.  
CAP COM Apollo 7, Houston.  
SC Roger Houston, Go.  
CAP COM Rog, could you give us an estimate on  
the time the CDR and LMP went to sleep.  
SC Yes, I'll look at the log here.  
CAP COM Say again please?  
SC I think it was 109 hours, 108 hours.  
CAP COM Rog.  
PAO

And that's the substance of communications with Astronaut Don Eisele over the Ascension tracking station. It doesn't appear that we are going to get acquisition from the tracking ship Mercury. That pass goes down, just touches the edge of the acquisition circle and we are apparently out of range of communications there. In that previous pass over Ascension, you heard Don Eisele advise that Commander Wally Schirra and Lunar Module Pilot Walt Cunningham went to sleep at about 106 hours into the mission, that would have been roughly 2-1/2 hours ago and we do anticipate that they will be able to get at least a full eight hours of sleep. The medic also reports that all of our biomedical instrumentation appears to be working well at this time. The next station to acquire the spacecraft will be the tracking ship Redstone and that acquisition is scheduled at 111 hours 5 minutes ground elapsed time, roughly 34 minutes from now. At 110 hours 39 minutes, this is Apollo Control.

END OF TAPE

PAO This is Mission Control Center at 111 hours, 6 minutes into the flight. The Apollo 7 spacecraft is presently approaching a Tracking Ship Redstone in the midst of a night side pass during the end of the seventy first revolution. We'll standby for a call to the crew via the Redstone.

CAPCOM Apollo 7, Houston, through the Redstone.

SC Roger, Houston, Apollo 7.

CAPCOM It looks like we both have the night watch.

SC Yeau, it works out that way, doesn't it?

CAPCOM Apollo 7, Houston.

SC Roger, Houston, 7 GO.

CAPCOM See - I have a procedure here on this television operation which I just now passed up so you don't need to write it down. And it is pretty simple. It involves a technique to get the best TV picture and it sorta goes like this. When holding the TV during the next TV period, take a look at the position of the AL switch and report the position. That's probably before you start taking the television pictures. Then about one half way through during the period of television change the position of this AL switch. The AL stands for auto light although it is not automatic.

SC Okay, I got you.

CAPCOM And -

SC Using the AL out.

CAPCOM All right, they will be coordinated with you from the ground. Also, another point it takes the TV about 90 seconds to warm up, about a minute and a half to warm up.

SC I see. Okay, we'll keep that in mind.

CAPCOM Okay, thank you. Apollo 7, Houston. We would like to turn the O2 tank to fans on for 5 minutes and then off. I'll remind you just about LOS. Apollo 7, Houston. I may have passed that up incorrectly. If I said off, it should be on. Turn them on for 5 minutes and then off.

SC Roger, I got you, keep going now.

CAPCOM Apollo 7, Houston. Say Don, we're not getting anything on the biomed. Have you changed anything?

SC All right, Roger, I'll have it on in a couple of minutes.

CAPCOM Okay, thank you. Apollo 7, Houston, opposite anomaly, please. Also, I have a little bit more information on that television. That AL stands for automatic light control. It is similar to automatic gain control electronic circuit apparently. And it presents a bright light source from sort of washing out the picture.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1110600 (CDT 1:08) 358/2

SC Now I would like to GO...  
CAPCOM Thank you. Apollo 7, Houston, coming  
up on LOS - Canary at 36.  
SC Roger, read you.  
CAPCOM And you can turn the - cryo two tank  
fan back off.  
SC Roger.  
PAO And we have lost of signal with the space-  
craft over the Redstone. The next station to acquire will  
be the Canary Islands in about 22 minutes from now. This  
will be the first contact over the Canaries in sometime as  
the spacecraft orbit begins to swing back toward the north-  
ern part of the western hemisphere and towards the - high  
coverage we got on our state side passes. At 111 hours,  
15 minutes into the mission, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control 111 hours, 36 minutes into the mission. The spacecraft is now coming upon the Canary Islands Tracking Station coming out of darkness and into daylight as the cremenator, the line that separates the light and the day and the night periods on the surface of the earth begins to move over toward the states. And we'll be acquiring the spacecraft shortly from Canaries. We'll standby for a call to the crew.

CAPCOM Apollo 7, Houston.  
SC This is Apollo 7.  
CAPCOM Roger. Through Canary I have a request. I would like a reading on Pyro bat A, B, and bat C.  
SC Roger. Bat C is 36.0.  
CAPCOM 36.0.  
SC Standby for the pyros.  
CAPCOM Roger.  
SC Dale, I'm reading 37.0 for both pyros.  
CAPCOM Roger, 37.0. In what position are you leaving the DC indicator?  
SC Oh, it varies. I usually leave it on one of the main bus voltages.  
CAPCOM Roger, good. That is what we like, main A or B.  
SC Roger.  
CAPCOM Thank you.  
SC Hey, Bill.  
CAPCOM Roger.  
SC Ask the tower if they are going to recommend a type setting too.  
CAPCOM Okay, will and you might check the switch and throttle there.  
SC Roger. (Laughter)  
CAPCOM When I shake the stick mobile, you've got it.  
SC It says use plenty.  
CAPCOM Apollo 7, Houston, opposite anomaly.  
SC Roger.  
CAPCOM Thank you. Apollo 7, Houston, 1 minute LOS Canary, Honeysuckle at 23.  
SC Roger, Honeysuckle at 23.  
CAPCOM Roger.  
SC Do you want me to stand up for that?  
CAPCOM Roger. (Laughter) Stand up for that one.  
SC Right.  
PAO This is Mission Control. The spacecraft has now gone over the hill and out of acquisition from Canary Islands. The next station to acquire will be another one that we - haven't passed over for sometime. That will be Honeysuckle on - the eastern part of Australia. As you

APOLLO 7 COMMENTARY, 10/16/68, GET: 1113600 (CDT 1:38) 359/2

PAO heard in that pass, a bit of light hearted conversation between Don Eisele and the ground, Eisele, requesting a flap setting which of course refers to aerodynamic flight in the aircraft and the earth's atmosphere. Our indications here in Mission Control Center are that everything continues to function well with the spacecraft. There are no problems at this time. This is Apollo Control at 111 hours, 46 minutes into the mission.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1122300 (CDT 2:26) 360/1

PAO This is Apollo Control at 112 hours, 23 minutes into the mission. The Apollo 7 spacecraft has just crossed just over the northeastern edge of the Australian continent and is just barely within range of Honeysuckle. We don't anticipate any conversation with the crew on this pass. However, CAPCOM Bill Pogue is putting in a call. And we'll standby to see if we get a response from Don Eisele.

CAPCOM Okay.

PAO And it doesn't appear that we will hear from the spacecraft on this pass over Honeysuckle. However, we should have very communications on the upcoming pass over the Redstone Tracking Ship. Here in Mission Control Center it has been a very quiet evening as it has also been aboard the spacecraft and very little scheduled on the flight plan for the next 4 hours as Commander Wally Schirra and LM pilot Walt Cunningham are now about 4 - 4 and 1/2 hours into their sleep period. The next major activity for the crew following breakfast will be actinese connected with a minimum impulse SPS service propulsion system burn. And in about 6 hours from now, they should begin powering up some of the spacecraft equipment associated with that burn, such as the guidance and navigation system and the stabilization and control system with the burn scheduled about 2 hours after that. At 112 hours, 27 minutes into the flight, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1123900 (CDT 2:42a) 361/1

PAO This is Apollo Control at 112 hours 39 minutes. The spacecraft is now coming upon the Redstone tracking ship in the South Pacific. This is in the middle of the night side pass and Cap Com Bill Pogue advises that he anticipates most of this pass over the Redstone and the subsequent pass over Antigua will be taken up by passing up a flight plan update to Donn Eisele aboard Apollo 7. We just put in a call to the spacecraft, we'll stand by.

SC Roger, Houston. Go ahead with your flight plan update. Also would like ... update when you get through with this one.

CAP COM Rog. I'll give you a nav. update as soon as I get through with the flight plan.

SC Bill, would you log me 40 clicks with the water pistol and 2 aspirins please?

CAP COM How many clicks?

SC Four-zero.

CAP COM Rog. 40 clicks on the water and 2 aspirins.

SC In four hours.

CAP COM The flight plan update will start at 115 + 10 CMC powerup.

SC Roger.

cap com Okay. You can delete the reference to CMC powerup at 117 + 20. Roger, at 118 + 00, add fuel cell O2 purge also unstow and set up TV. That's at 118 + 00 hours.

SC Roger.

CAP COM Next item is at 119 + 04, TV on.

SC Roger. TV on at 119:04, TV on. Do you want us to turn it on 90 seconds before and let it warm up or is that the turn on time you want.

CAP COM Rog. That'll take care of it. The Texas AOS is 119 + 06 and sorry to interrupt but we need opposite omni.

SC Roger.

CAP COM And Donn, you can let me know when you're ready to resume copy of flight plan update.

SC Roger. I'm all ready.

CAP COM Okay, at 119 + 30 FCS attitude reference check (previously scheduled at 89 hours 50 minutes, 89 + 50 minutes). That's just for information. And, we'd like that SCS attitude reference check starting at 119 + 30 at 30 minute intervals up to the time of the burn.

SC Roger (garble)

CAP COM So if you want to make a pick at 120 + 00 and 120 + 30.

SC Okay.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1123900 (CDT 2:42a) 361/2

CAP COM            Okay. The notation at 121 hours in  
reference to SPS burn four, the time is 120 + 43.  
SC                   Roger, understand that you're going  
to burn at 120 + 43.  
CAP COM            Roger, and over there in the box  
where it says two jet ullage, you can write in quads bravo  
and delta, quads B&D.  
SC                   Rog, we got 'cha on that.  
CAP COM            Roger and you can delete the line in  
reference to initiate battery charging.  
SC                   Okay, got that.  
CAP COM            Delete the half box in reference to  
the star count test there, the telescope star count test  
sun, light, sight, et cetera.  
SC                   Roger.  
CAP COM            Under the line where it says MCC up-  
date, add for landmark tracking. You will receive an update  
for landmark tracking at that time.  
SC                   Understand landmark tracking update.  
CAP COM            Rog, and at 121 + 20 P-52 option three.  
SC                   Roger.  
CAP COM            At 121 + 40 state vector voice update.  
SC                   You say state vector voice update?  
CAP COM            Affirmative.  
SC                   What's that for?  
CAP COM            Stand by. That's for the landmark  
tracking, in case you need it. If required, that's in  
case you need it for the landmark tracking, it's not --  
Ah, rog, in case anything happens during the landmark track-  
ing you'll have a state vector to fall back on.  
SC                   Oh, I get 'cha.  
CAP COM            Okay, you can delete the reference to  
the star count test three at 122 hours. Apollo 7, we're  
coming up on LOS Redstone. I'll pick you up at Antigua for  
the rest of the flight plan update.  
SC                   Okay.  
CAP COM            Antigua at 58. Apollo 7, Houston if  
you're still reading, the map update is rev. 72, load 112 +  
56 + 50, 74.9 degrees West.  
PAO                 This is Mission Control. We've lost  
contact with the spacecraft over Redstone and will acquire  
again in about 10 minutes from the Antigua station. This  
is Apollo Control at 112 hours 49 minutes.

END OF TAPE

PAO This is Mission Control. The Apollo 7 spacecraft is now coming upon the Antigua Tracking Station at 112 hours, 58 minutes into the mission. We'll standby for the call up to the crew and the remainder of this flight plan update which CAPCOM Bill Pogue was in the process of passing up when we lost acquisition with the Redstone.

CAPCOM Apollo 7, Houston, through Antigua.

SC Go ahead, Houston.

CAPCOM Roger. I'll go ahead with the flight plan update. Before I start, did you read the map update?

SC I got a Rev 72 and a 12 plus 56.

CAPCOM Okay. REV 72, 112 plus 56 plus 50, nodal crossing at 74, niner west.

SC Roger. 56 plus 50 and then 74. niner west.

CAPCOM Roger. And continuing with the flight plan update at 122 hours.

SC Roger, GO.

CAPCOM Roger, at 122 hours, delete the 3 references. H2 heaters on, telescope star count, and fuel cell purge. Add at 112 hours, 222 ORB NAV (except marks). At 112 plus 20, P23 update, star in gimbal angles.

SC Got you at 112 plus 20 you got a P plus a pack of 122, what did you say about the landmarks again, I didn't get that.

CAPCOM Okay. That was not landmarks. Perhaps, it is sufficient just to say that at 122 hours P22 ORB LAV, and at 122 plus 20, P23 update.

SC Does that mean you want me to do a P plus - orbital navigation in 122.

CAPCOM Affirmative.

SC Now let's - okay. I don't get it. You want me to do a plan from 122 on sometime and also during that period you are going to be reading updates to us - in this period?

CAPCOM Well, at 122 plus 20, there will be a 223 update staring gimbal angles.

SC Okay. Don't you think that might be a better off a little later after we get done with my own little NAV.

CAPCOM Okay, let's talk about it in just a minute. Let me go ahead and go through the rest of the updates. At 123 hours, delete the reference to coas calibration. At 123 plus 30, add 223 star horizon sighting. You can delete the reference to the attitude control tests that occur at about 123 plus 45.

SC Roger.

CAPCOM At 124 plus 20, add G & N, SCS power down and delete the reference to P54 coas evaluation.

SC Roger, Bill.  
CAPCOM Okay.  
SC Go ahead.  
CAPCOM At 125 plus 30, delete the reference to  
P25.  
SC Roger.  
CAPCOM And that is the end of the update. Let  
me check on this other thing.  
SC Okay, how long does this pass of this  
earth mass is suppose to be?  
CAPCOM Okay, standby. The orb nav takes one  
daylight pass.  
SC All right, that is just what I thought.  
CAPCOM Okay, and you are thinking that the  
P23 update is going to catch you right in the middle there.  
SC It shouldn't be too bad. Walt can  
probably write it down while we're doing the rest of it.  
CAPCOM Okay.  
SC How come you move it up to 23 - up  
2 hours, is that to get done so we can get to bed?  
CAPCOM Affirmative.  
SC I see.  
CAPCOM We're coming upon LOS. And one other  
quick item- we just want to - at the point at the rest of  
the laboring point, Donn and Wally's, Correction Wally and  
Walt's sleep period last until 116 plus 00 hours.  
SC Roger, I got that.  
CAPCOM Okay. We will have Canaries at 0 niner.  
SC Okay, I'll see you then.  
CAPCOM Thank you.  
PAO This is Mission Control. We had lost  
of signal from Antigua. And we will be picking up the  
Canary station in about - about 5 minutes from now. As you  
heard the sleep period for commander Wally Schirra and  
Walt Cunningham is scheduled to last through 116 hours.  
And we have been advised that they began their sleep period  
at about 108 hours, elapsed time which would give them a full  
8 hours sleep. At 113 hours, 6 minutes, this is Apollo  
Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1130800 (CDT 3:11a) 363/1

PAO This is Apollo Control at 113 hours  
10 minutes. We'll be putting in a call shortly to the  
spacecraft over Canaries, let's listen in on that one.

CAP COM Apollo 7, Houston through Canary.

SC Roger Bill.

CAP COM Apollo 7, Houston. Coming up one  
minute LOS Canary. Carnarvon at 46.

SC Roger.

PAO This is Mission Control. We had a  
very quiet pass that time over Canaries which is typical of  
most of the contacts we've had this evening with the space-  
craft. This mission continues to progress very well at this  
point and the next station to acquire will be Carnarvon,  
Australia and we expect that in about 30 minutes from now.  
This is Apollo Control at 113 hours 18 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1134600 (CDT 3:48a) 364/1

PAO This is Mission Control. The Apollo 7 spacecraft is now a little more than one half way through its 72nd revolution, some 113 hours 46 minutes after liftoff and we're coming up on the Carnarvon tracking station. We'll listen for any reports from the spacecraft as we complete this Australian pass.

CAP COM Apollo 7, Houston through Carnarvon.

SC Roger Houston, Apollo 7.

CAP COM Apollo 7, Houston one minute LOS Carnarvon. S-band volume up at 53 for Honeysuckle.

SC Roger.

PAO This is Mission Control. We don't expect any further conversation with the spacecraft for about 2 more minutes while that covers the gap between the Carnarvon station and Honeysuckle so we'll return with that pass in about two minutes. This is Apollo Control at 113 hours 52 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1135400 (CDT 3:57a) 365/1

PAO This is Apollo Control. We've just  
put in a call to the spacecraft over Honeysuckle.  
CAP COM Apollo 7, Houston through Honeysuckle.  
SC Roger, Apollo 7, read you.  
CAP COM Rog.  
SC Bill, would you log me another 24  
clicks of water please?  
CAP COM Roger, another 24 clicks. Thank you.  
Hey Donn, how you feeling?  
SC Say again, Bill.  
CAP COM How you feeling today?  
SC Oh, pretty fair.  
CAP COM Good.  
SC I've got kind of a head cold but other  
than that everything's fine.  
CAP COM Rog.  
SC Just sitting here doing my daily  
dozen.  
CAP COM Oh, Good.  
SC That's my only chance. Those other  
guys get up and they monopolize it.  
CAP COM Yeah, I saw 'em on television this  
morning.  
SC Say again?  
CAP COM I saw 'em using the exerciser on tele-  
vision this morning.  
SC Oh, is that right?  
CAP COM Rog. Rubber necking just like every-  
one else.  
SC Right.  
CAP COM Apollo 7, Houston one minute LOS at  
Carnarvon, at 14, ah Redstone at 14.  
SC Roger, Put me to ... around for me  
... for a while.  
CAP COM That's a pretty good trick if you can  
pull it off. Might work for the other fellas though.  
SC Ah, ...  
PAO This is Apollo Control at 114 hours  
and we've lost contact now with the spacecraft over Honey-  
suckle and that was one of our more lively passes as far as  
conversation with Donn Eisele who is the only crewmember  
who's awake at the present time. Commander Wally Schirra  
and Lunar Module Pilot Walt Cunningham are now into their  
6th hour of sleep period which began at 108 hours elapsed  
time and scheduled to end in about 2 more hours. You heard  
Eisele report that he has consumed 24 clicks of water, that  
figures out to just about 12 ounces since his last report  
from one and one-half hours ago. Donn also reported that

APOLLO 7 COMMENTARY, 10/16/68, GET: 1135400 (CDT 3:57a) 365/2

PAO he's feeling pretty fair with the exception of the headcold and also indicated that he gets his chance on the in-flight exerciser while his other two crewmembers are getting their sleep. We'll be picking up the spacecraft again in about 14 minutes, 13 minutes over the tracking ship Redstone at 114 hours 02 minutes into the flight, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1141400 (CDT 4:17a) 366/1

PAO This is Apollo Control at 114 hours 14 minutes. The spacecraft Apollo 7 is now about midway through it's nightside pass and coming up on the tracking ship Redstone. We'll listen in as the Cap Com Bill Pogue puts in a call to the crew.

CAP COM Apollo 7, Houston through Redstone.

SC Houston, Apollo 7.

CAP COM Apollo 7, Houston Go.

SC Ah, Rog, I was just looking over this flight plan for the eight hour active period. Looks like we're pretty well booked up. I guess ... and the burn is to be the event of the day and I think if we get behind or have any problems we'll probably drop some of these other things if we need to.

CAP COM Roger. (pause) Apollo 7, Houston, one minute LOS Redstone, Bahama at 31.

SC Roger.

PAO This is Apollo Control. That completes our pass over the Redstone. The spacecraft is now off the horizon and out of range and we'll be acquiring at Bahama in about 10 or 11 minutes. The mission continues to go very well throughout the night and here into the morning hours and we'll expect activity to pick up within the next hour or two. Beginning in about the next 40 minutes, Donn Eisele is scheduled to start powering up the command module computer and at about 116 hours elapsed time, his two fellow crewmen, Wally Schirra and Walt Cunningham are scheduled to end their sleep period. This is Apollo Control at 114 hours 22 minutes.

END OF TAPE

PAO This is Apollo Control at 114 hours, 31 minutes. Apollo 7 spacecraft at the present time is passing over the isthmus of Panama and moving up toward the Bahama Tracking Station acquisition. We've been advised that that acquisition will probably be delayed about a minute. So we'll standby and pick up the call through the crew probably about 1 minute from now. The spacecraft is presently in an orbit with apogee of approximately 152 nautical miles and a perigee of about 89 nautical miles. It completes a revolution once every 89 minutes. We should be getting that call to the crew. Don Eisele who was on duty while Wally Schirra and Walt Cunningham completed their 8 hour sleep cycles. And we expect that call shortly from Bill Pogue who is CAPCOM here in the Mission Control Center.

CAPCOM Apollo 7, Houston, through Antigua.  
SC Roger, Houston, Apollo 7.  
CAPCOM Roger, Don. I'd like a readout on bat

Charlie voltage.

SC Roger. ...36 volts.

CAPCOM 36, thank you. Also Don, I've been taking a look at the flight plan. And it may look a bit crowded, but we think everything could be gotten in there in the normal course of events in getting ready for the burn. However, we have looked at a couple of things here that could be deleted without affecting anything. First off, if you start getting crowded you can scrub the photography entries. It sort of goes without saying. Second, you can scrub the SCS attitude reference check. And third, delete the P22 exercises associated with P52.

SC Roger.

CAPCOM You know if you get in a bind.

SC Yeah, I think we can get through it okay, Bill. I just wanted to point - we do get behind and if we do have any problems we will probably drop them.

CAPCOM Roger. The point is well taken.

Apollo 7, Houston, 1 minute LOS Antigua, Canary 43.

SC Roger.

PAO This is Apollo Control at 114 hours, 39 minutes. We're about to lose contact with that station over Antigua. And we will be reacquiring in about 4 minutes at Canary Islands. We'll pick up again over Canary.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1145300 CDT 4:54a 368/1

PAO This is Apollo Control at 114 hours, 53 minutes into the mission. We've just completed a pass over the Canary Island station and there was a small amount of conversation with the spacecraft on that pass which we will now play back for you in its entirety.

CAPCOM Apollo 7, Houston through Canary.

SC Roger.

CAPCOM Go.

SC Instead of powering up at 115:10 and do a P23 ... check, I think I'd just as soon wait and do that at the time we do the start of horizon landmark business - start of horizon navigation.

CAPCOM Roger.

SC In other words, I don't see any point in powering and maneuvering around to do one little check.

CAPCOM Right.

SC ... when it would be easier to do the same thing a little late - catch them all at the same time probably..

CAPCOM Apollo 7, Houston. Regarding the power up at a later time just before the new state vector is agreeable here.

SC Okay Boy.

CAPCOM And we'll change our flight plan accordingly.

SC Roger.

CAPCOM Apollo 7, Houston. One minute LOS Canary, we'll have another minute at Madrid if you'll turn the S band volume up. We can hear you talk.

SC Okay.

CAPCOM At Carnarvon at 18.

SC Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1151800 (CDT 5:22a) 369/1

PAO This is Apollo Control at 115 hours 18 minutes into the mission. The spacecraft is due to be acquired shortly by the Carnarvon tracking station and here in Mission Control Center, activity is beginning to pick up a little bit after a very quiet night. We'll be shortly getting ready for the days activities and onboard the spacecraft we would expect that Donn Eisele would, within the next 25 or 30 minutes, begin powering up the command module computer in preparation for that fourth service propulsion system burn. And, Cap Com Bill Pogue now has just put in a call to the crew, we'll listen in.

SC Houston, Apollo 7.

CAP COM Apollo 7, Houston, Go.

SC Roger, would you log me another 30

clicks of water?

CAP COM Say again the number.

SC Three-zero.

CAP COM Roger, three-zero.

SC Rog.

CAP COM Apollo 7, Houston. One minute LOS Carnarvon. Honeysuckle at 26 so you can turn up your S-band volume in about one minute.

SC Roger.

PAO This is Mission Control. We've had a momentary loss of signal as the spacecraft moves out of acquisition from Carnarvon and will be reacquiring again shortly over Honeysuckle and we'll stand by for that reacquisition.

CAP COM Apollo 7, Houston. Request O2 tank two fans ON five minutes then OFF.

SC Roger, Houston.

CAP COM Apollo 7, Houston.

SC Roger Houston, Go.

CAP COM Donn, I'm not sure I'll have the full time on this pass because of the keyhole. I'll have a block data for you at Texas and we'll have Texas on the hour.

SC Roger.

CAP COM Apollo 7, Houston, coming up on LOS Honeysuckle. You can get the fans back OFF in about one-half a minute.

SC Roger.

PAO This is Apollo Control. We've had loss of signal now of the spacecraft over Honeysuckle. We'll be acquiring the station at Corpus Christi in about 26 minutes at 115 hours 35 minutes into the mission, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1160000 (CDT 6:03a) 370/1

PAO This is Mission Control 116 hours into the flight of Apollo 7. The spacecraft is presently approaching the Texas tracking station at Corpus Christi. Will be coming within range of that station and simultaneously will be coming out of a night side pass and into daylight. We'll be acquiring the spacecraft shortly and we would expect that Wally Schirra and Walt Cunningham will also be ending their sleep periods shortly having gotten about eight hours of sleep this time. They're scheduled to be awaking shortly if they are not already up. We'll stand by now as Cap Com Bill Pogue puts in a call to the crew.

CAP COM Apollo 7, Houston through Texas.

SC Roger.

CAP COM Rog, I have a block data update when you're ready to copy.

SC Stand by, Bill. (pause) Go ahead with the update, Bill.

CAP COM Rog, block data, 075 dash one alpha + 311 - 0650 117 24 04 3443 076 dash 1 alpha + 302 - 0650 11900 11 3592.

SC Roger.

CAP COM 077 dash 1 alpha + 238, - 0630, 120 33 36 2888, 078 dash 4 alpha + 310, - 1600 123 17 25 3410, 079 dash 4 alpha + 307, - 1600 124 53 43 3520, 080 dash 4 alpha + 263 - 1611 126 27 32 3137. Readback.

SC Roger. 075 dash 1 alpha + 311 - 0650 177 24 04 3443, 076 dash 1 alpha, I'll have to get the ... again from you, the time was 11900 11 3592, 075 dash 1 alpha + 238 - 0630 120 33 36 2888, 078 dash 4 alpha + 310 - 1600 123 17 25 3410, 079 dash 4 alpha + 307 - 1600 124 53 43 3520, 080 dash 4 alpha + 263 - 1611 126 27 32 3137.

CAP COM Roger. On the first block the time was 117 + 24 + 04.

SC Roger, I got that.

CAP COM Rog, and on the next block the lat and long are + 302 - 0650.

SC Okay + 302 - 0650.

CAP COM Rog, and on the 4th block, 078 dash 4 alpha, the long is -1600.

SC Roger, -1600.

CAP COM Rog, readback is correct.

SC Okay then.

CAP COM Go. Apollo 7, Houston, you're Go for 92 dash one.

SC Roger, Go for 92 one. (pause) Houston, Apollo 7.

CAP COM Apollo 7, Houston Go.

SC (garbled) log me one ...

APOLLO 7 COMMENTARY, 10/16/68, GET: 1160000 (CDT 6:03a) 370/2

CAP COM Would you say again please?  
SC Roger, about half hour ago I took one  
lobo pill, (garbled).  
CAP COM Apollo 7, Houston. I'm having diffi-  
culty reading you.  
SC Roger, understand.  
CAP COM Now you're very clear, would you say  
again please?  
SC Roger, about 30 minutes ago I took one  
lobo pill, would you please log that?  
CAP COM Rog, thank you.  
PAO This is Apollo Control. We've had  
loss of signal now with the spacecraft moving out over the  
Atlantic Ocean toward the Canary Islands. During that pass  
you heard Cap Com Bill Pogue pass up the GO to the space-  
craft for another days flight through rev. 92 and Don Eisele  
reported that he had taken another 30 clicks of water which  
makes his total now something on the order of about 20 oun-  
ces during the past several hours. We'll be acquiring the  
station at the Canary Islands, acquisition coming up at  
elapsed time of 116 hours 17 minutes, that will be about  
2 minutes from now and we'll pick up the spacecraft again  
at that point. At 116 hours 16 minutes this is Apollo  
Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1161800 (CDT 6:20) 371/1

PAO This is Apollo Control. The spacecraft will shortly be coming into acquisition at Canary Islands, CAPCOM Bill Pogue just put in a call. We'll standby for any conversation from the crew.

CAPCOM Apollo 7, Houston, 1 minute LOS Canary, Carnarvon at 52.

SC Roger.

PAO This is Mission Control. The spacecraft is now gone out of range of the Canary Island Tracking Station. And we will be picking the spacecraft up again in about - about 26 minutes from now at 116 hours, 52 minutes, ground elapsed time over the Canarvon, Australia Tracking Station. At 116 hours, 25 minutes, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control at 116 hours, 45 minutes into the flight of Apollo 7. At the present time here in the Mission Control Center, we are in the midst of a shift change. The prime Flight Director, Glenn Lunney, is in the control center and will shortly be relieving Flight Director, Gerry Griffin. Also, our CAPCOM coming up will be Jack Swigert who will be replacing Bill Pogue at the CAPCOM position. During the night and into the early morning, the Apollo 7 mission continued to progress very well. It was almost a quiet and uneventful period. A short time ago, Gerry Griffin pulled the flight controllers here in the center and passed along a goal to the crew for 92-1, an additional 16 revolutions carrying them through an additional day. The major activity during the evening had the major commander Wally Schirra and LM pilot Walt Cunningham sleeping. Don Eisele was tending the store and passed up the flight update which will include a TV pass with acquisition expected at about 9:09 a.m. this morning. From the Corpus Christi site, the crew has been instructed to turn on the television some 2 minutes from that to give things time to warm up. A little later on at - about 120 hours, 43 minutes elapsed time, we have the fourth SPS service propulsion system burn scheduled. This will be a minimum impulse burn with an anticipated duration of about 1/2 second, imparting about 15 feet per second velocity - additional velocity to the spacecraft. And shortly the crew will begin powering up the command module computer. And they are getting set up for that burn. We haven't yet heard from Wally Schirra and Walt Cunningham. They were scheduled to be waking up a short while ago. And we anticipate we will hear from them during the next spacecraft acquisition about 5 minutes from now and when acquire at Carnarvon. Don Eisele reported that he was doing - well. He said to report that he felt pretty fair. He said he still had a head cold, but otherwise was feeling fine and was doing his daily dozen in exercise on the inflight exerciser. The crew all appeared to have gotten a good night's sleep. I anticipate that Schirra and Cunningham got at least 8 hours and the same for Eisele. As far as the weather goes, we are continuing to watch tropical storm Gladys near the western tip of Cuba. Otherwise, the weather and all of the other recovery areas - all recovery areas and premature throughout the world appears to be pretty good at this point. We will be acquiring spacecraft now over Carnarvon coming up at 116 hours, 52 minutes, elapsed time. At 116 hours, 48 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1165500 (CDT 6:58a) 373/1

PAO This is Apollo Control Houston. I'm having a little trouble getting the plug in the right hole. At 116 hours 55 minutes into the flight, the crew seems to be waking up over Carnarvon. We have this conversation going on.

CAP COM Apollo 7, Houston through Carnarvon.  
Apollo 7, Houston through Carnarvon.

SC Go ahead Houston.

CAP COM Good morning, Donn, how are you this morning?

SC Oh, just fine Jack except (garbled).

CAP COM Roger, Donn. Would like to get a Battery C voltage readout here at Carnarvon.

SC Roger, Battery C is showing 36.5 and good morning, Jack.

CAP COM Good morning, Walt, and how are you?

SC Fine.

CAP COM And, we're going to be sending you a state vector and target load over Texas and I'll have the maneuver pad and nav check to pass up to you.

SC Roger. At the same time? Roger, at the same time?

CAP COM Rog. And one other thing I wanted to discuss with you here at this time is the TV went over so well yesterday, would like to know if you could save one of your breakfast packages to demonstrate eating on television this morning?

SC We'll give them something interesting but we probably will mostly be through breakfast by then. If we have any food left, we will eat it for the audience.

CAP COM Okay, would appreciate it if you could do it.

SC We're starting to eat our breakfast now Jack and we're not going to want to schedule things around that TV camera.

CAP COM Okay, understand.

SC What's the news this morning, Jack?

CAP COM I'm getting it summarized now. Will be passing it up to you in a little bit. We'll pick up Honeysuckle here, Walt, at 11700, you want to turn up your S-band.

SC 11700 turn up the S-band.

CAP COM Roger. Apollo 7, Houston. Looks like your primary evaporator is drying out again.

SC You know that thing has been working fine all night long until you guys came on.

CAP COM Maybe it's me?

SC That started down during this pass

APOLLO 7 COMMENTARY, 10/16/68, GET: 1165500 (CDT 06:58) 373/2

SC didn't it?  
SC Jack, about that, Walt just came on,  
too.  
CAPCOM Good morning Wally. Could we get you  
to set down the primary evaporator to go to decrease on the  
back pressure switch and do not reservice it at this time?  
SC You want another increase, don't you?  
I'm shutting it down now.  
CAPCOM Excuse me. Increase on the back pres-  
sure switch.  
SC That could work. Whenever it dried  
out, I go ahead and close it up. You don't want it reser-  
viced now?  
CAPCOM That is affirmative.  
CAPCOM What we would like to do is have the  
reservice take place 117 + 15.  
SC Roger, Ed. Is that to be over a sta-  
tion or do you just want me to write it down?  
CAPCOM You can do it on your own.  
SC Okay, I'll do it at 11715.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1173305 (CDT 7:37a) 374/1

PAO This is Apollo Control Houston, 117 hours, 33 minutes into the flight. Among other things we have planned today, is the minimum impulse burn of the service propulsion engine. It will be on the order of one-half of a second, just a blip. The Delta-V is estimated at around 14 - 15 feet per second. The burn will be done in plane and it will have a very, very slight effect on the apogee/perigee, the resulting number should be something like 94 by 160. Here's the conversation that's going on with the crew by Guaymas.

CAPCOM Apollo 7, Houston through Guaymas.

SC Roger, ready to copy that data.

CAPCOM Okay, the maneuver pad: SPS4, the minimum impulse, 12043, all ball plus 00129 minus all ball minus all ball 1563 plus 09010007829705 minus 085 minus 055, burn time 000421161321120000000 minus 3103 plus 096341417, roll, pitch, and yaw are all balls. Remarks, heads-up, SES, posigrade, the sextant star not visible after 120 plus 20 plus 00.

SC Roger, Jack, nice read on that. Read back as follows: SPS4 12043, 00129 minus all balls minus all balls, 1563 plus 09010007829705 minus 085 minus 055, 000421161321120, 2 balls, 4 balls minus 3103 plus 096341417, all balls on the attitude, heads-up, SES posigrade, the sextant star not visible after 120 plus 20, over.

CAPCOM That is affirmative. I have the morning news for you.

SC Go ahead.

CAPCOM Apollo 7, before that, could we get you to go to ACCEPT, so we can send up your target load and state vector.

SC Roger, we're drinking our morning coffee.

CAPCOM Roger, the Supreme Court acts of yesterday, now assures that all 50 States will have 3 candidates to pick from for the November election. The headlines this morning says, "Apollo 7 Sails On," and there is a picture of Harriet Eisele watching the TV pass from the viewing room here at MCC. At the Olympics, Al Harter became the first athlete in history to win a fourth gold medal. He has won the discus event, and entered in the Olympics since 1966 and that's about it from your friendly newscaster.

SC Thank you Jack, I appreciate that.

CAPCOM Roger.

SC It seems like Mr. Herter is a very good athlete.

CAPCOM He sure is. Apollo 7, Houston.

SC Go ahead Jack.

CAPCOM Roger, Guaymas had a visual siting of you as you passed over.

SC Good, we have a picture, we have a couple of visions of them.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1173305 (CDT 7:37a) 374/2

CAPCOM Roger. Apollo 7, Houston. We have  
finished our update, the computer is yours.

SC Thank you, Jack.

CAPCOM Apollo 7, Houston, we're showing a  
70 degrees yaw.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68. GET: 1174300 (CDT 7:47A) 375/1

CAPCOM                    Apollo 7, Houston, 30 seconds LOS  
Bermuda, Canaries at 117 plus 51.

SC                         Roger.

PAO                         This is Apollo Control Houston at 117  
hours and 50 minutes. I'm not sure it went out over the loop,  
but we got a report in the course of that pass from our  
Corpus Christi station that the television converter, a  
vital instrument that converts the signal received from the  
spacecraft to a seeable image, is down. It's in a red  
condition, and right now they're estimating it will take  
several - 13 30 is the estimate in GET, and we're showing  
12 hours 54 minutes. That's about a - something on the  
order of 40 minutes to get it fixed. They are feverishly  
working and trying to fix it coming up on this next pass,  
which is programmed as the television pass, and of course  
it's from Corpus that we've seen such high quality pictures  
over the last two days. We'll watch this very closely and  
try to keep you informed. To recap, the converter at the  
Texas station is down, it is in a red condition, and  
technicians there are working feverishly to get it in shape  
to receive the television pass about an hour and a half  
from now. Their current estimate is that the set - the  
converter should be in a GO configuration in about 35 minutes.  
At 117 hours and 52 minutes into the mission this is Apollo  
Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1175420 (CDT 07:59a) 376/1

PAO This is Apollo Control Houston 117 hours 54 minutes into the flight. And again this morning, Wally Schirra notes that he is getting a slight pitch rate, a torquing effect, if you will, from the spacecraft without hands off the controls, he notes some unusual, very slight, but unexplainable moments coming into the vehicle, just as he reported yesterday afternoon. It is worth noting that the spacecraft is at perigee. It is right over the Canary Islands, just south of the Canary Islands. Here is how the conversation is going.

CAPCOM Apollo 7, Houston through the Canaries, standing by.

SC Roger, Jack. How come we don't have our tape running?

CAPCOM Stand by.

SC Jack, while you are there, observe our pitch rate at this time.

CAPCOM Okay, stand by. I don't have that display callup, Wally. Just a minute.

SC This is one of those free pitch rates again.

CAPCOM Roger.

SC I'm afraid we are all convinced that this machine does not want to fly X-axis vertical, either down or up.

CAPCOM Copy that.

SC And that's only because of this gimbal locks in once in a while without even suspecting it, or getting out of a rapid change of attitude. I think you can see our pitch rate will start decreasing, it's in 4/10 of a degree per second and no pitch in.

CAPCOM Okay, I'm watching it now.

SC All my channels are off. Now should I go to - you want GET on number 1 ball, is that what it is?

CAPCOM Affirmative.

SC Locate 1620, you can watch that.

CAPCOM Okay.

SC (Garble) pitch rate (garble).

CAPCOM Right. I can see that.

SC And I didn't do a thing to it. It's not transferring to another axis, that's on another point.

CAPCOM Okay, copy that.

SC I could have blown a lot of fuel -

CAPCOM Roger, copy.

SC But it wasn't worthwhile that we explore this one on this mission. I'm getting pitch towards 0 per second.

CAPCOM Wally, your X-axis now is pointed

APOLLO 7 COMMENTARY, 10/16/68, GET: 1175420 (CDT 07:59a) 376/2

CAPCOM heads down toward the earth?  
SC Generally towards the earth, that's  
right. We are - the S-IV - the big engine is ahead of us  
and our plus axis are trailing. You got the angles down.  
Now you notice the rates are almost stopped and I haven't  
done anything to the spacecraft.  
CAPCOM Okay.  
SC Can you give us a chart update when  
you get a chance, Jack?  
CAPCOM Roger. Walt, I have the chart update.  
SC Go ahead.  
CAPCOM Okay, for rev 74, the time of the node  
117 + 23 + 02 - longitude 143.1 degrees west, right Ascen-  
sion of 04 + 34.  
SC Jack doesn't know this, 0 yaw rate,  
0 pitch rate.  
SC - magazine S. Ground formation over  
the western end of Africa.  
SC You read, Jack?  
CAPCOM Roger, Walt. We are about 15 seconds  
LOS Canaries. Tananarive at 118 + 11.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1181100 (CDT 8:15a) 377/1

PAO This is Apollo Control, 118 hours, 11 minutes into the flight. Earlier we mentioned the converter problem at our Corpus Christi station. Corpus now estimates the converter will be up and running in about 20 minutes. In other words to support the pass. We are about to contact through Tananarive; there goes the first call.

SC This is Apollo 7, and we read you.

CAPCOM Roger. Wally, we have been doing some - looking into this torque business; there have been some calculations made that show that there is a 5 tenths of a foot pound torque possible going through perigee when your broadside - going through perigee broadside to the direction of flight. This produces a possible rate of .03 degrees per second in pitch due to drag. I would like to ask you if this torquing rate that you have experienced exists throughout a complete revolution or is it more pronounced - noticeable at perigee only.

SC We have (garble) at perigee; we were thinking here last night perhaps (garble) engine on the lower right lost perigee, torquing right back - was most of the time.

CAPCOM Okay, copy. We do have some more information on your secondary switch over.

SC Go.

CAPCOM Okay, our best data for your onboard gage readings for secondary tanks switch overs are as follows; are you ready to copy?

sc Go.

CAPCOM Okay. Quad A 46 percent. Quad B switch with tank Quad D, Quad C, 54 percent, Quad D 49 percent; and at present Quad C is the closest to switch over; the predicted switch over time should be approximately 140 hours GET.

SC Roger; and I need a reading for 46, to go to D, 54 and 49 percent; Quad indicating that (garble); over..

CAPCOM That's affirmative 7.

SC Thank you. Hey, Jack, has that correlation between onboard readings and actual quantities been fairly consistent (garble)?

CAPCOM That's affirmative Walt. We think the numbers we have passed you are pretty good numbers right now.

SC Thank you. (garble) will be complete in 8 seconds.

CAPCOM Apollo 7, about 20 seconds LOS Tananarive; Carnarvon at 118.26.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1182725 (CDT 8:37A) 378/1

PAO This is Apollo Control Houston 118 hours 27 minutes into the flight. We have acquired via Carnarvon reading data out of the spacecraft through that station right now. The flight plan activities for the next hour or so looks like this: they'll do an inertial measuring unit and realinement - that's a platform realinement - between Carnarvon and Hawaii; they'll run through their minimum impulse thruster program, run it through the computer; they are to take some land photography from the New Mexico area, of the New Mexico area and the Bahamas; and our first television is scheduled at Texas acquisition, which will be 119 hours and 6 minutes, and our charts show that we should lose signal via Mila, east of Mila, at - or Merritt Island, at 119 hours 17 minutes. Immediately out over the eastern edge of Bermuda the biomed harness and switches to give us data on Donn Eisele, the command module pilot. We have no conversation at Carnarvon. Let's monitor the loop for any thing that might develop.

PAO This is Apollo Control Houston again 118 hours 29 minutes. The Corpus Christi site has changed out several parts of their converter system and without any success. I say again the Corpus converter is still down. They were estimating it would be up and ready about this time. They are going to continue to work on it. They still have about 33 minutes, and I'm sure they will work very hard. If for some reason we do not have that real time converter capability, the Texas station of course will record the signal. We'll have the tape flown to Houston and then we will see it later today. We will go ahead with as much television as we can program through the Merritt Island station, and just to recap, we have not ruled out the Texas station yet, but it does not look good. Two units of the converter were changed out in the last 35 minutes, and apparently there is something else wrong. At 118 hours 31 minutes into the flight we are standing by with the spacecraft over Carnarvon.

CAPCOM Apollo 7 Houston 1 minute LOS Carnarvon. Would you turn up the S-band for contact with Honeysuckle?

SC

Roger.

SC

Houston, Apollo 7. Over.

CAPCOM

Go ahead.

SC

Roger. I've got 4 balls 5 for triangle difference Rigel - I've got 5 balls, excuse me, on Rigel and Sirius and you're reading with 4 T angles now.

CAPCOM Affirm. We followed you all the way through 52 there, Donn.

SC

This is not the regular navigator.

CAPCOM

Okay.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1182725 (CDT 8:37 A) 378/2

SC This is the alternate navigator.  
CAPCOM Roger, copy.  
PAO This is Apollo Control Houston 118 hours  
39 minutes into the flight. And according from the last  
reading from our Texas station at Corpus Christi they will  
not be able to support the TV pass. They are still working  
feverishly to get their converter fixed, but it's been  
without any major success at this point. Thus they have  
to suggest that they will not be able to support the pass.  
However, they will be watching and recording the inbound  
signal at Corpus, they will be describing it to us on a  
separate loop; and by voice at least we will try to relay  
what - at least something of the quality of the picture and  
the state of the action as is seen from Corpus, and we should  
be able to see a picture at Merritt Island acquisition at  
which time is not yet posted, but we'll have it for you  
very shortly. The spacecraft has lost signal now via the  
Honeysuckle station in eastern Australia, and we'll come  
back to you at the ship Huntsville in about 15 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1185320 (CDT 8:58a) 379/1

PAO                      This is Apollo Control Houston, 118 hours, 53 minutes into the flight and we just received word from Corpus Christi that the balky converter down there this morning is green and go, it has been fixed. There are saying now they will be able to support a TV pass over Corpus on this up coming Rev across the States. We have not yet acquired through the Huntsville, we will come back to you when we do, in about 5 minutes. This is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1185832 (CDT 09:03a) 380/1

PAO                    And we are standing by here in the Control Center, set to acquire any moment now. 119 hours and the crew is now asking if we are receiving their program and we are not. The screen is black. The screen is still black. There are some light patterns moving back and forth across it. Elapsed time 119 hours 05 minutes and we should be getting a solid signal from Corpus just any second. As reported earlier, we have had trouble with that converter this morning and we have got our fingers crossed. They reported about 20 minutes ago, they were up and ready. Now we are seeing some white lines across the screen which is the kind of thing which preceded the transmissions in the past 2 days. Donn Eisele just asked "are you picking up anything," and now Texas has acquisition, spacecraft acquisition. Still no picture, some snow. Donn Eisele reported that the crew commander has a sign which is getting heavy. Obviously in jest. Now we are beginning to see glimpses of a picture, but it's a large, washy kind of a thing with no definition of the forms.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1190700 (CDT 9:11a) 381/1

PAO ... washy kind of a thing with no definition of the forms. Now, we're checking antenna patterns, still no readable picture. We're now alerted, the crew is holding a sign of some sort. Guaymas has done a handover to the Texas site for data purposes, which is coming in fine. The EECOM says we should switch antennas, that might help. Picture very washy and unreadable. Just white smear through center of dark screen. We're not just sure of whether it is the converter or not, but we have had as yet no readable picture, no readable picture in the Control Center, 119 hours, 8 minutes. Among the more anxious viewers is Flo Cunningham, the wife of Walt Cunningham, and Walt's brother Bill, who is visiting here from Alaska. Now, we're getting a picture. Let's all have a look.

SC Jack, do you see the picture now?

CAPCOM We're receiving the picture, it's a little bright. Could you bring it in a little? Roger, the lovely Apollo Room, high atop everything.

SC Roger, this is your Captain speaking on this flight, and you can unfasten your seat belts and relax and we hope we can make this flight enjoyable for you. At this time, we would like to demonstrate one of our minor problems here, in fact, I should tell you what time it is. Just one moment and we'll get a computer on the line here. Okay, we'll reset that.

CAPCOM He's getting GET to you.

SC And now we have that time, Captain. It was 119 hours, 9 minutes and some odd seconds into the flight. One of our problems at this time is making note of the small arrow here, we're not sure what it means, in that up is not necessarily up or down, but we will discuss that at a later time. What you just observed was a fumbling attempt to get the keyboard working on our DISKY, hich is our display keyboard, and the numbers you are reading is the time (garble) from the onboard computer. And now you see Walt Cunningham preparing some of our food at our food station. I'll bring you in closer to show you what our food stations have. We have two buttons, the upper button is COLD, the lower is HOT; and there is a spout, that Walt is now uncovering. When we depress the button, with the appropriate container over the silver spout, we deliver 1 ounce of water, be it hot or cold. At this time, Walt will get some of the food. One of the nicer features of the food preparation on this (garble) is a nice feature about the food, is that we have hot water and this makes the food much more enjoyable and quite palatable. We use surgical shears to cut open the upper portion of the plastic bag and we pry open the spout, which was interfaced in the top. At this point, Walt is applying it to the tap.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1190700 (CDT 9:11a) 381/2

SC We will use cold water to reconstitute some fruit juice. You see him depress the button, and each depression supplies 1 ounce of cold water. This water is quite delightful. It's cold, about 50 to 45 degrees Fahrenheit. At first, we were adding chlorine to the water daily to be sure there were no contaminants or bacteria that was developing in the water. This left a rather bad after taste. We are now adding chlorine approximately every other day.

PAO That's Wally Schirra doing this running commentary.

SC You will notice the bubbles that are in the bag. There's a little bit of gas in the water, this does not cause too much problem. If you get a lot of gas, it does, and we have to clean the gas out of the tank again. Fortunately, this has not happened too often. Then, the next step is to knead the bag, this mixes the powder concentrate with the water and then we end up with a complete drink. We may have a zero g demonstration available for you here, where we can spin the bag and you will notice the bubbles are sort of breaking and falling apart. They do not form a solid mass of bubble, but you can see in the center a rather interesting formation of bubbles. I'd like to pass the camera now to Donn Eisele. I'd like to try to show you the problem we have with the water condensation underneath, on the water panel. Here goes the camera to Donn. While Wally is getting under the couch to demonstrate the suction that we use to clean up the water that has been accumulating on the cold pipes, I'll describe the system that we do have. We have an overboard dump hose, which dumps the liquid we have in the Spacecraft overboard through a heated vent, that hose has been passed to Donn, and he has a purge fitting attached to the end of it. I'm now going to go to the dump position on the waste management system, and Wally will be back cleaning up some water while Donn and I throw light on it.

CAPCOM Apollo 7, Houston. Could you give us the position of the switch on the TV camera?

SC ALC is out.

CAPCOM We would like to switch that position to ON, to the ALC position.

SC Roger. Is your picture satisfactory.

CAPCOM It's a good picture, we're trying to improve it a little.

SC Roger. We return to show you a picture of a plumbing fitting that has a lot of water on it, clinging to it. Do you see the water on the fitting? Can you see the water on the fitting, Jack?

CAPCOM We're looking - don't quite see it.

SC Okay.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1190700 (CDT 9:11a) 381/3

SC Could you see the fitting?

CAPCOM Affirmative. Could you go back to the OFF position?

SC It's always worked better in the OFF position. Maybe you will see it when he starts sucking it up. Okay, now he's going to suck up with the water with the vacuum line we have. It's a very, very small vacuum, but so far it seems to have worked pretty well at taking water overboard. It's a pretty good size blob of water that's - yes - takes quite awhile. Are you observing that, Jack?

CAPCOM Affirmative, we got you 5 by. We've got about another minute and a half of picture here.

SC Okay. Okay, this is part of our regular preparation for a burn now, is to clean off what water we can see because after an SPS burn it seems to end up on the aft bulkhead. This water is formed by condensing on the cold glycol lines. John we'll finish out the run by showing you the MDC in rfont of the Commander's station. Go ahead and talk Donn.

SC All right. this is the Commander's station, the left seat driver controls the attitude of the spacecraft and also the operation of the main control system. This instrument in the middle is the heart of the whole thing really, it is called our Flight Director Attitude Indicator which is comparable to the artificial horizon in an airplane, it is just that it operates all 3 axes instead of just two. These various switches control the configuration of the manual attitude control system. We can hold an attitude or we can free drift, we can have 2 or 3 modes to use the hand controller. This is the hand controller that you use to slide the spacecraft around various attitudes manually. These switches here control the electronics and whether or not the signals get from the hand controller out to the little jets to fire them.

PAO There, we are LOS the spacecraft almost over Bermuda. We have lost the picture, but we saw a most interesting demonstration of space-age plumbing. Here's some more commentary.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1191800 (CDT: 9:22a) 382/1

PAO And the TV lines have been turned down which will end our television activities for another day and we are going to have a full discussion of the light setting and some other conditions relative to the television pass. There may be additional commentary; we'll just leave the line open.

PAO Well, all in all, we would have to say the television reception today was not up to the past 2 days and as yet, we can't put our finger on any one thing; whether it was a ground station problem or if so, where. We did see some major changes in the picture quality with the automatic light control system that was referred to as ALC was brought up and frankly I had the impression that the picture quality was better with the automatic light control button operating although we spent most of the pass with it turned off. We are only a minute from LOS through the ship Vanguard. Now we do have some commentary; let's go back.

SC Thank you Jack. Jack, could you get a view of that water blob down there?

CAPCOM We couldn't pick up the water itself very closely but we saw approximately what you were vacuuming.

SC That's one of the areas; a number of them where they collect. There is one right inside where the steam conductor is; I'm in there now; there's a real big blob of water.

CAPCOM Roger; copy. We'll see you at Tananarive.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1200015 (CDT 10:04a) 383/1

PAO This is Apollo Control Houston 120 hours into the flight of Apollo 7. Through Tananarive we had this conversation.

CAPCOM Apollo 7, Houston through Tananarive.

SC Roger Houston.

CAPCOM We are standing by.

SC This is Apollo 7.

CAPCOM Go ahead, 7.

SC Roger. (garble)

CAPCOM Walt, the com is real bad here at Tananarive. I could hardly make you out. Could you say again?

SC Okay. It's a question on putting the water boiler back on the line.

CAPCOM Stand by.

CAPCOM Apollo 7, Houston. Bring back the water boiler back on the line. We will take a look at it over Carnarvon at 120 + 00.

SC Roger.

PAO That concluded Tananarive. We are about to acquire through Carnarvon. Let's listen.

COMM ARIA 2, go remote.

PAO This is Apollo Control Houston. For those of you in the news center, building 1, the auditorium area, we are feeding the tape from the Corpus - the Merritt Island pass yesterday to the news center. You can see it on your monitors over there right now. It's a far sharper picture than the one you saw in the live, real time situation.

SC Houston, Apollo 7.

CAPCOM Go ahead, 7.

SC Roger. I've got the shaft at 115.33 and the trunnion at 31.707 for the sextant star check.

CAPCOM Roger, we copied that. And Walt, we would like your 02 fans, tank 2, on for 3 minutes.

CAPCOM Apollo 7, Houston. Your sextant star check is go and we would like to remind you to have the batteries off as soon as possible after the burn.

SC Okay.

SC Jack, we did a - skipped that prior request at SEF attitude reference check at 119 hours and 30 minutes. I did that the other day and gave you 1 hours 15 minutes comparison. That should be better than the check we've had a call for.

CAPCOM Okay, we copy that.

SC It's not that I didn't want to do it, but we did it - so free that we had a good chance to do it.

CAPCOM Okay.

SC That should be it.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1200015 (CDT 10:04a) 383/2

CAPCOM Apollo 7, 1 minutes LOS Carnarvon,  
Hawaii at 120 + 25.  
SC Roger. The water boiler looks like  
it's ticking along okay, Jack. I think we can leave it  
on.

CAPCOM We concur. Looks good here.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1202720 (CDT 10:33A) 384/1

PAO Apollo Control Houston here 120 hours  
27 minutes into the flight and we have acquired through  
Hawaii and here is what it sounds like.

CAPCOM Apollo 7 Houston through Hawaii.  
SC Roger.  
CAPCOM Wally, we saw - as you went over the  
hill we saw you looking at Noun 54. Your R1 and R2 will  
be zero in that Noun, because the F-4B and CSM speed vectors  
that we uplinked a while back are the same. The CSM state  
vector is a good state vector.  
SC Roger.  
CAPCOM And we would like to have you turn 02 fans  
tank 01 off for the burn here.  
SC Tank 01 off and tank 02 off. Is that  
correct?  
CAPCOM That is affirmative.  
SC Okay. I'll turn tank 01 off now.  
CAPCOM Apollo 7, all your systems and everything  
looks real good here on the ground.  
SC Roger we go.  
SC Jack, on this we have flight plan seat  
assignment.  
PAO You heard Schirra advise a moment ago  
that the seating was per the flight plan, that would be  
Donn Eisele in the left couch, Walt Cunningham in the center,  
and the commander, Wally Schirra in the right couch. They  
are prepped and ready for the minimum impulse burn to be  
performed at 120 hours 43 minutes, about 13 minutes from  
now, which burn should take place over the states. Standing  
by.  
SC Houston, Apollo 7, over.  
CAPCOM Go ahead 7.  
SC Roger. I forgot to give you a reading.  
I had 246 mm of 02 partial pressure this morning.  
CAPCOM Okay, copy that.  
PAO This is Apollo Control 120 hours 30 minutes.  
It obviously is going to be pretty quiet until we get over  
the states. We will come back up to you then.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1203930 (CDT: 10:44a) 385/1

PAO This is Apollo Control, 120 hours, 39 minutes into the flight. In about 3 minutes we expect the minimum impulse burn; it will be a burn with a duration of .4 seconds. Four tenths of a second. It is to impart a differential velocity of about 13 feet per second. The flight plan shows it at 12.9. The burn will be done in plane and the result in orbit should be 90 by 156 nautical miles. Presently in about 89 by 156. Schirra is advising the attitudes are all set up; let's tune in on some of that conversation.

CAPCOM Apollo 7, Houston. I'll give you a time hack at 2 minutes. 5, 4, 3, 2, 1, mark. T minus 2 minutes.

SC (garble) 5 by 5 (garble) S band normal.  
Thrust 00 (garble)

PAO That's Wally Schirra calling off the items on the check list and Don Eisele responding to the check list. Schirra is over in the right seat, Cunningham in the center, Eisele on the left, and Eisele will manage the burn. Spacecraft is over Arizona.

SC (garble) on; and 22nd (garble)/ Roger  
I read you (garble)

PAO Our charts down here show that the ullage maneuver at 20 seconds worth is being performed using Quads B and D 4, 3, 2, 1 - and we have here a shout which would indicate we had a burn.

SC (garble) off. Okay, we've got 10 seconds with the (garble) Roger. (garble) essentials minus 2.24, 4 balls on it (garble).

PAO All in all it sounds like a good burn.

SC The (garble) is open. Roger; motor circuit open and coming through the powers - fuel pump (garble) coming off. Regress now into the side near (garble)

CAPCOM Roger; copy.

SC Did you copy my (garble) the 1F?

CAPCOM Affirmative.

SC D mode still open still (garble) To control. Both controls are locked; (garble) off, minus 7.7.

CAPCOM Roger; copy that.

SC We are doing 15.3 I guess.

CAPCOM Roger.

SC Saw all 4 control valve.

CAPCOM Roger; say again Wally.

SC All 4 valves rolled but that is a surprise in that short burn.

CAPCOM Okay.

PAO As you can hear, it is all quiet in the loop after that successful burn. The spacecraft is right over New Orleans coming up on the Cape.

SC Houston, I just checked all file batteries and both are 30 second modes.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1203930 (CDT: 10:44a) 385/2

CAPCOM Roger; thank you.  
SC Jack, did you ever drive those little  
Houston Park cars; those bumper things?  
CAPCOM Say again.  
SC Those little scooter things when you try  
to pass you bump off the ground rails and crash into each  
other? That's the closest thing we can think of for that  
particular burn; like surging head on into somebody like an  
amusement park scooter.  
CAPCOM Okay, roger. Copy that. We got a commanded  
on time down here of .51 seconds.  
SC Roger.  
CAPCOM Wally, how long has it been since you  
have been to an amusement park and done that?  
SC I'm not going to tell.  
CAPCOM Roger.  
SC It's really been about a couple of days  
ago.  
PAO Perhaps it was a little hard to understand  
that transmission; Schirra has likened that little blip burn  
we just did to the impact that one gets at an amusement park  
in operating the little dodging cars - the kind that operate  
from an electrical source and bump into each other. A pretty  
good - brisk bump as I recall. He was asked when the last  
time he had operated one of those cars and he - his memory  
failed him. We'll keep the line open.  
SC Jack, (garble) pumps only 1 day watch and  
then turn it back off.  
CAPCOM Wally, we couldn't copy that; could you  
say again?  
SC We are doing a (garble) couch seats are  
(garble)  
CAPCOM We still couldn't get it Wally.  
SC We are going to put the crew back into  
their original seat assignments.  
CAPCOM Roger; copy.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1203122 (CDT: 10:35a) 386/1

SC (garble) testing is OFF.  
CAPCOM Roger.  
SC Rate fuel also. To go on pitch, roll  
and yaw. Pitch (garble) start. (garble)  
CAPCOM Huntsville LOS.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1204930 (CDT 1054A) 387/1

PAO The flight dynamics officer has computed the orbit resulting from that little blip burn a few minutes ago and he presently reads it at 90.3 by 157.5 nautical miles. 90.3 by 157.5.

CAPCOM Apollo 7, Houston, you are 1 minute LOS Bermuda, we'll pick you up at Ascension at 121 plus 03.

SC Jack, (garbled) landmark track update data.

CAPCOM Roger, We'll - we have landmark track pad, I'll pass it up to you at Ascension. Your orbit now 90.3 by 157.5.

SC Roger.

SC Hello Air Boss, Hello Air Boss. This is Apollo 7. Do you read?

AIR BOSS Roger, read you loud and clear LD. Overhead and doing well.

SC Air Boss, Air Boss, Apollo 7. Over.

PAO This is Apollo Control. Donn Eisele apparently spotted the carrier Essex, which is cruising off the southeast coast of Florida. He just put in a call and raised the carrier using the call sign AIR BOSS, and we're getting one half of the -

SC Hello Air Boss, hello Air Boss. Apollo 7, do you read?

PAO Well, with the spacecraft out in the far edge of the Antigua area I'm sure that's the last we'll hear of it until it reaches Ascension and we won't know just how well they received the AIR BOSS - the call sign AIR BOSS, which is the carrier Essex operating about a thousand miles southeast of the coast of Florida. At 120 hours 56 minutes into the flight this is Apollo Control

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1210500 (CDT 11:10a) 388/1

PAO This is Apollo Control Houston 121 hours 05 minutes into the flight. Through Ascension, we have been talking to the crew and Wally Schirra cleared up the mystery of that broadcast to the - to AIRBOSS, which is the code name for the primary search and recovery airplane operating off the carrier Essex, that the crew hopes to see in a business way on about next Tuesday morning. Apparently, the recovery people were having a practice run this morning and were using all the call signs. Unbeknownst to them, Apollo 7 was overhead, heard it's name called, and answered the call, so they had a brief chat. Here is the tape from Ascension.

CAPCOM Apollo 7, Houston through Ascension.  
SC Roger Jack.  
CAPCOM Roger, 7. Walt, we would like to have you switch your 02, tank 1, fans to AUTO.  
SC Roger, done. The bottle temperature was all the way down to 34 degrees and steam pressure was about .07 or .08.  
CAPCOM Roger, we copy that. We would like to find out what cyclic water accumulator you are operating on now.  
SC AUTO off and manually cycling the water accumulated three or four times.  
CAPCOM Okay, copy that. Did you switch AUTO accumulators lately, Walt?  
SC Unless the last time anybody used the manual water accumulators, maybe they turned OFF and flipped back to a different one. But I switch it regularly every day and have done a component check.  
CAPCOM Okay, real fine. We copied some calls down to AIRBOSS. I think some of the conversation was that of the recovery forces. They were conducting an exercise in the Atlantic.  
SC Roger, understand that. We actually jumped to interrupt their conversation being switched from Apollo 1 to Apollo 7.  
CAPCOM (Laughter) Roger. I am ready with this landmark tracking pad whenever you are ready to copy. Okay, Surgeon, what do you want? Surgeon? Wait, EECOMM what did you make of that?  
SC Jack, this is Donn. Go ahead with your landmark update.  
CAPCOM Okay. Landmark ID 10 south. Next landmark 67 on track. Third one, 141 south. GET, first landmark, 122 + 14, 122 + 24, 122 + 35.  
SC Roger, understand. First landmark is 10 south, number 2 is 67 on track, number 3 is 141 south. The times are 122 + 14, 122 + 24, 122 + 35.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1210500 (CDT 11:10a) 388/2

CAPCOM That is correct.  
SC Roger, we got you.  
CAPCOM Apollo 7, would you switch your BIO-  
MED to CMP.  
SC Will do. We changed around so much  
we lost that one.  
CAPCOM Copy.  
SC We mean he has a signature now, hey?  
CAPCOM Affirmative.  
SC Hey Jack.  
CAPCOM Go ahead.  
SC You ought to send our pulse rate  
reports up here these days.  
CAPCOM Stand by.  
SC Okay.  
CAPCOM Apollo 7, Houston. The pulse rates  
for CDR run 60 to 70, the CMP 75 to 90, with 118 during  
the burn, and LMP has been running around 80.  
SC Report looks good, very good.  
CAPCOM Okay, we are just about to lose you  
over Ascension, Tananarive at 121 + 19.  
SC Roger. Jack, ask the medics to save  
that strip of chart for Donn at the burn start. It's  
a nice souvenir for him.  
CAPCOM Will do, Wally.  
SC I still have the ones (garble).  
PAO This is Apollo Control Houston. Wally  
Schirra demonstrated an extraordinary interest in medical  
matters this morning. He asked for the pulse rates of all  
three crewmen and he suggested that, inasmuch as we had  
caught Donn Eisele on the chart plugged in, got a pulse  
rate of 118 at the start of that burn, which he was operat-  
ing, that the doctors should save the chart indicating the  
pulse rate and give it to him as a souvenir after the  
flight. It will be done. At 121 hours 11 minutes into  
the flight, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control at 121 hours 34 minutes into the flight. During this recent swing across the Indian Ocean we had some remarkably clear communication with the spacecraft on the S-band channel via an ARIA aircraft. Remarkably clear - it was clear here on the ground, it was clear in the spacecraft. First let's take the tape from Tananarive, then we'll follow through the aircraft pass. Here it goes.

CAPCOM Apollo 7, Houston through Tananarive.

SC Roger. (garbled)

CAPCOM And 7 you might be interested in that tropical storm Gladys is now officially a hurricane. It's present position is approximately over Havana. You'll be able to see it your next rev. You'll pass almost over it.

SC Roger.

SC Houston, Apollo 7.

CAPCOM Go ahead Apollo 7.

SC Roger. We're scheduled for a P-52 (garbled) I wonder how critical that is. We're not in the proper attitude for it and (garbled)

CAPCOM Apollo 7, could you say again? Comm through Tananarive is pretty poor.

SC Roger. Regarding the P-52 alignment at this time, I would prefer not to do that. Over.

CAPCOM Okay, copy, standby. Apollo 7, we concur, negative P-52.

SC Roger, thank you.

CAPCOM Apollo 7, we've got about 1 minute LOS Tananarive. We would like to try an S-band contact through ARIA 2 at approximate 121 plus 30.

SC Okay, we'll do that.

PAO Then at Carnarvon, we had this conversation.

CAPCOM Apollo 7, Houston through ARIA 2. Apollo 7, Houston through ARIA 2.

SC Go ahead, Houston.

CAPCOM Roger, 5 by through ARIA 2.

SC Very good, best ARIA we've had yet.

CAPCOM We thought this is about the best comm we've had through ARIA, Wally.

SC (garble)

CAPCOM I think maybe we ought to use S-band through all of our ARIA aircraft when we try ARIA.

SC I reckon it's better than the word we've had with Tananarive.

CAPCOM I agree.

SC How long can we work this burn, Jack?

CAPCOM We'll pick up Carnarvon here at 121 plus

APOLLO 7 COMMENTARY, 10/16/68, GET: 1213400 (CDT 11:39a) 389/2

SC Roger, do we overlap with ARIA?  
CAPCOM Affirmative, they will cut us off  
ARIA, at that time and I have a P-27 voice pad to give to  
you at Carnarvon.

SC Roger, we'll standby. Just the same,  
Jack. I'm doing this here at (garble). It's about  
pitched to about 26 degrees. We're not getting the torquing  
effect we had before.

CAPCOM Okay, Good enough.  
SC Roger, we are getting some more water out  
of the suits and hoses and it maybe (garble) to the burn to  
clean the water up, but obviously we're getting it.

CAPCOM Okay, copy.  
CAPCOM Apollo 7 Houston through Carnarvon.  
SC Roger, loud and clear (garbled)  
CAPCOM It's on the subject of water, Wally.  
Through the TV pass over the states we didn't copy two -  
we showed that you were missing two cycles on the water  
accumulators there. You might have picked up some excess  
water due to that.

SC I don't think so. It's a bigger deal  
than that. We've been cycling off and on extra, it's been  
cycled initial - whether or not you know, every 10 minutes,  
we can't watch it every 10 minutes. We've been cycling extra  
tests, and we've done as much as two to three per hour extra.

CAPCOM Okay, copy that.  
SC It might be worthwhile to have somebody  
watch it. We are in AUTO at this time.

CAPCOM Roger, I understand, and ready on that  
CSM NAV vector whenever you're ready to copy.

SC Coming up. Stand by. Go.  
CAPCOM Okay. CSM NAV 71 122 plus 00 plus 00  
21 01605 00001 74611 57774 13503 367773 04434 02252 52655  
65527 66107 55530 11372 22031 minus 5170 25200. The NAV  
check 121300000 minus 3049 plus 07891 1515.

SC Roger, read back follows: CSM Verb 71  
122 plus 00 plus 00 2101605 00001 74611 57774 13503 36773  
04434 02252 52655 65527 66107 55530 11372 22301 05170 25200  
Over.

CAPCOM Roger Copy.  
SC NAV check read back: 12130 4 balls minus  
3049 plus 07891 1515. Over.

CAPCOM Apollo 7 Houston 1 minute LOS Carnarvon,  
Guam at 121 plus 47.

SC Roger. We've got some stars in sight.  
We may do a 52 after all.

CAPCOM Roger.  
PAO And that wraps up the Carnarvon pass,  
and the spacecraft is proceeding due north of Australia  
in a northeasterly direction, and we should pick up in

APOLLO 7 COMMENTARY, 10/16/68, GET: 1213400 (CDT 11:39A) 389/3

PAO Hawaii at 59 - 129 hours 59 minutes,  
17 minutes from now. This is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET 1215300 CDT 11:58a 390/1

PAO This is Apollo Control at 121 hours,  
53 minutes. Through Guam a minute or so ago we had this  
communication.  
SC (cut off) to Houston, loud and clear.  
CAPCOM Standing by.  
SC Thank you. Jack, would you log CMP  
for 10 clicks on the water gun?  
CAPCOM CMP 10 clicks.  
SC Rog.  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM It appears that your SM OX TB switch is  
on, is that affirmative?  
SC Negative it is off. (garble) are on.  
CAPCOM Roger, I understand.  
SC Jack, this is LMP give me 10 clicks on  
the water gun, and when you get a chance can you give us  
a map update please?  
CAPCOM Roger, I'm working.  
CAPCOM We're just about to lose you over Guam,  
Hawaii at 12159 that update then.  
SC Very good.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1220000 ((CDT 12:04p) 391/1

PAO This is Apollo Control at 122 hours even into the flight of Apollo 7. Hawaii is about to acquire. Let's listen.

SC Roger, loud and clear.

CAPCOM Okay. I have your map update.

SC Go.

CAPCOM For rev 77, the node 121 + 49 + 18. Longitude at 148.8 degrees east. Right ascension of 04 + 28.

SC Roger. Jack, we haven't been using any of the right ascensions, so you can drop those unless we ask for them, if you will.

CAPCOM Okay.

SC Jack, this is CMP.

CAPCOM Go ahead.

SC Roger. How many of these landmarks do you have real time coverage for?

CAPCOM Stand by.

CAPCOM Apollo 7, Houston. We are covering the first two landmarks real time.

SC Okay.

SC Houston, Apollo 7.

CAPCOM Go ahead, 7.

SC Roger. We've been up here trying to deliberate whether to look at the hurricane or the second landmark. I suspect the second landmark is socked in by the hurricane, is it not?

CAPCOM Negative.

SC Okay.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Roger. I have this mid-course navigation pad to pass up whenever you are ready to copy.

SC We will do it later. Pretty well tied up this right now.

CAPCOM Okay, no problem. I'm just standing by.

SC Go ahead, Jack. I'll copy it.

CAPCOM Okay. GET start 123 + 52, 124 + 04. Star 37, star 45, roll 000001, pitch 356306, yaw 001001, shaft 019355, trunnion 018014, end.

SC Apollo 7, do you read?

CAPCOM Apollo 7, we read you now. Did you copy the mid-course navigation pad?

SC 124 + 04, stars 37 and 45, 000001, 356/306, 001/001, 019/355, 018/014, over.

CAPCOM Roger. I didn't get your readback of the first time. That should be 123 + 52.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1220000 (CDT 12:04p) 391/2

CAPCOM	Apollo 7, Houston. Did you copy that?
SC	I didn't copy anything after I gave
you the readback.	
CAPCOM	Okay. Walt, I didn't get the readback
on the first time.	The first GET was 123 + 52.
SC	Concur.
CAPCOM	Okay, real fine.
SC	Jack, mark the LMP 10 clicks of water.
CAPCOM	Copy that.
SC	Hey Jack, this is Donn.
CAPCOM	Go ahead.
SC	That first landmark you gave me must
be within the field	of UA optics at zero roll angle.
CAPCOM	Roger, copy that.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68 GET: 1221500 (CDT: 12:19p) 392/1

CAPCOM Apollo 7, Houston. Apollo 7, Houston.  
Apollo 7, Houston.  
SC Go Jack.  
CAPCOM Okay, Don, on this second land mark, we  
can give you a shaft to help you out here; shaft will be 008  
and your trunion will be 031; this will occur when your  
pitch down 10 degrees and in orb rate.  
SC Roger; understand, thank you. Jack, I'm  
going to try to (garble); it turns out that my field of view  
in the telescope is only 38 degrees anyway, so I might as  
well go ahead and use the rockets.  
CAPCOM Okay, real fine.  
SC I think that last time I wasn't aware  
that I needed to roll the spacecraft; I was with it to the  
south but it was found out that it was out of view.  
CAPCOM Okay, copy that.  
SC Got some nice weather down there now Jack.  
CAPCOM Weather was pretty good when I came in  
Wally.  
SC Looks good from here. There's just a solid  
overcast for a hurricane.  
CAPCOM Roger.  
SC There's a little bit of vortex way out  
here. I'll take one shot as we're going into it.  
CAPCOM Just moving north toward Florida.  
SC Frame 89, frame 88 was approaching Houston,  
frame 89 is approaching the hurricane just now.  
CAPCOM Roger, copy.  
SC Magazine "O". Houston, Apollo 7.  
CAPCOM Go ahead.  
SC Roger; could you give us the shaft and  
trunion for the third land mark as well.  
CAPCOM Will do. Shaft 040, trunion 031.  
SC Roger. There's some high cirrus way  
high in the forms of vortex sweeping from our left to our  
right and then coming back around to the north, which of  
course is the characteristic pattern and some solid stuff  
you can almost see the eye in the center of it. I'm trying  
to get a picture of that now.  
CAPCOM Roger.  
SC It's definitely a circular pattern here.  
Going over the eye in about another, oh I'd say, in another  
4 or 5 seconds.  
CAPCOM Copy.  
SC I'll try to give you a pretty good eye  
location. Stand by; mark; that's the eye. That's a real  
tight report on you -  
CAPCOM Roger Wally.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1221500 (CDT: 12:19p) 392/2

SC Good weather from here.  
CAPCOM Apollo 7, Houston.  
SC Go ahead Jack.  
CAPCOM Roger; at the time you read out the mark,  
we got the latitude and longitude and we have passed it on  
to the Hurricane Center.  
SC Roger (garble) first on mark of hurricanes.  
CAPCOM Roger.  
SC Fair weather. Jack, tell the Center to  
center it away from that boat base.  
CAPCOM Roger; will do Wally.  
SC Tell them to get out of the way next  
Tuesday.  
CAPCOM We'll do that too.  
SC Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1222500 (CDT 12:29p) 393/1

PAO                    This is Apollo Control Houston, 122 hours, 29 minutes. In the course of that pass, you heard Wally Schirra marking the hurricane Gladys with great accuracy. He went right over the eye of the hurricane and seemed to take a little understandable pride in this Manned Weather Satellite function, which the crew assumed riding right over the top of a hurricane. We'll be back with an Ascension acquisition in about 3 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1223800 (CDT 12:43p) 394/1

PAO Apollo Control Houston. We should have  
Apollo 7 by Ascension any moment. Let's listen.  
CAPCOM Apollo 7, Houston through Ascension.  
SC (garble)  
CAPCOM Roger, it appears that the evaporator  
is dried out again.  
SC Houston, Apollo 7.  
CAPCOM Alright, go ahead.  
SC Are we going to have a tape when we lose  
you here?  
CAPCOM That's affirmative, Wally. How did the  
last two landmark tracking points come out?  
SC Terrible.  
CAPCOM Roger, copy.  
SC On the second one, I relied on all optics  
to bring it in when it got within 38 degrees, and the thing  
never moved off center, so at that point I attempted to go  
for it manually and by the time I got over to it - I recognized  
it, and it was going so fast that high speed resolve wouldn't  
catch it, it got away from me. I finally picked it up just as it  
went outside the field of view, but it was too late to get  
any marks. On the third one, I loaded in the date of the  
landmarks up here, and when I went down on optics, it indicated  
that the target was completely outside the field of view to  
the north. After awhile, I saw the thing a little bit to  
the south, I think, with, relative (garble).  
CAPCOM Roger, copy.  
SC Now, the next time we do, I'm going to  
stick to the (garble) mode, as we originally planned and  
see if that works out better.  
CAPCOM Okay.  
CAPCOM Apollo 7, Houston. One minute LOS  
Ascension. Tananarive at 122 plus 54.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1225407 (CDT 12:57P) 395/1

CAPCOM Apollo 7 Houston through Tananarive.

SC Roger loud and clear.

CAPCOM Roger.

CAPCOM Apollo 7 Houston 1 minute LOS Tananarive,

Carnarvon at 123 plus 09.

SC Roger.

BND OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1231500 (CDT 1:20P) 396/1

PAO This is Apollo Control Houston 123 hours 15 minutes into the flight. A few minutes ago over Carnarvon we heard some interesting observations on meal planning, and on the taste of the meals, the caloric comments, and some very pungent comments from Walt Cunningham. Let's listen.

CAPCOM Apollo 7 Houston through Carnarvon.

SC Roger, loud and clear.

CAPCOM You are loud and clear.

SC (garbled) pitch down. Jack, do you put the PDC in Ball number 01?

CAPCOM Stand by.

SC (garbled) perigee by any means. We're about 40 minutes away from perigee.

CAPCOM Affirmative. Apollo 7 Houston, affirmative. We'd like PDC on ball 01.

SC Roger, you've got it.

CAPCOM Roger.

SC Do you have all bands or TDC?

CAPCOM TDC.

SC TDC.

SC Jack, this is Walt, I've got a comment on this food you might pass on to Frank or those guys. This high calorie stuff that's got everything all hiked up with calories is just really doing something to us. In order to get a lot of calories in a small way everything has been hiked up and it's all got a sweet taste. You think something tastes real good, but by the time you get to the end of the bag you can't really look it in the eye very well.

CAPCOM Roger, I understand that.

SC (Garbled) and as a result the food was raised in caloric count and it's all sweet (garbled)

CAPCOM Roger.

SC You also might pass on that crew, Jack, in case they haven't selected their menu yet, I had a tendency to pick out a menu with individual items listed that I liked a lot out of the samples. If I had it to do over again I would try to make sure I had a wider variety of acceptable foods.

CAPCOM Okay, copy that, Walt. We are about 30 seconds LOS Carnarvon, Guam at 12 plus 19.

SC Do you want to leave this on GDC ball 01?

CAPCOM Affirmative, we'll pick it up at Guam.

SC Okay.

CAPCOM Wally, is it about the same torque that you've observed previously?

SC No, we've got (garbled) just wanted to see if we can get some data, then we'll go back and realine the GDC.

CAPCOM Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1232000 (CDT 01:25p) 397/1

PAO This is Apollo Control Houston 123  
hours 20 minutes. We should be acquiring via Guam just any  
second.

PAO The Guam data has just flashed on  
our screens. The television displays here, I notice the  
cabin out there is running 69 degrees today.

CAPCOM Roger. Walt, I would like to have  
you turn your S-band OX tape switch off.

SC Off.

CAPCOM Roger. Wally, we noticed that the  
tailoff value that is presently loaded into the -

SC What was the answer, Jack, to your  
reading our TV switch on a while back when it was off? Did  
you find out about that?

CAPCOM Roger. Walt, it was the tape switch  
that we observed on telemetry on the ground and we thought  
it was the TV switch.

SC Okay, understand. Did our transponder  
secondary completely flop?

CAPCOM Stand by. Apollo 7, on the secondary  
transponder, that's not definite yet, but we don't want to  
reselect at this time.

SC Understand.

CAPCOM Okay and something else that we would  
like to discuss here. The tailoff value that is presently  
loaded in the computer for CMC is not large enough for what  
we have observed on your burns. We would like to load a  
new value into the computer with the following procedure.  
Are you ready to copy?

SC Wait one.

SC Roger, Jack. Go ahead with your pro-  
cedure.

CAPCOM Okay. Verb 21, noun 01, enter, 3003,  
enter, 74 enter. That's it.

SC Roger. Is that it?

CAPCOM That's it.

SC (garble)

CAPCOM Could you say again, Donn. You were  
cut out there just as you gave it.

SC Roger. Verb 21, noun 01, 3003 then

74.

CAPCOM Roger, that is correct.

SC Jack, (garble)

CAPCOM Say again, 7.

SC Okay, no strain.

CAPCOM Roger.

SC Jack, this is CMP.

CAPCOM Go ahead, Donn.

SC On these landmarks tomorrow I see

APOLLO 7 COMMENTARY, 10/16/68, GET 1232000 (CDT 01:25p) 397/2

SC we've got three passes scheduled,  
don't we?

CAPCOM Affirmative.

SC Okay. I would like to suggest that we devote one pass, or at least part of a pass to doing some unknown landmarks. I found that up here in flight that it is fairly easy to track any given object on the ground once you see it. The trouble with these known landmarks is that they are damn hard to bring in in the first place, because either the auto optics doesn't work or they are outside the field of view sometimes. I have found that you can track with the sextant fairly easily. So how about running that around with the G&N people and see if they are agreeable. We don't have anything in the flight plan at all about checking up on landmark performance.

CAPCOM Roger, copy that. We will toss it around here and let you know.

CAPCOM Apollo 7, Houston.

SC Go ahead, Jack.

CAPCOM Roger. We would like to zero some attitude errors by taking the B main switches and going to rate 2 momentarily, and then back to add 1, rate 2.

SC We are not getting much torquing this time, so there is not much sense spending - there isn't any input on this particular area.

CAPCOM Roger. We just thought we would watch it as you went through perigee.

SC Yes. I think what we will do is try to give it to you on the rest pass where we are tracking, because we are going to go back through it again.

CAPCOM Roger.

SC But we are going to face up to perigee.

CAPCOM Roger, copy that. You got 1 minute LOS Guam, Hawaii at 123 + 34.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1233500 (CDT 1:40p) 398/1

PAO This is Apollo Control, 123 hours,  
35 minutes. Through Hawaii, we're having this conversation.  
CAPCOM Apollo 7, Houston through Hawaii.  
SC Aloha.  
CAPCOM Roger, we would like to - if you're  
not busy with the computer, we would like to send you an  
update.  
SC Go ahead. Wait, hold it a second. You  
have got it.  
CAPCOM Okay, coming up. I'm ready with it now,  
check when you are ready to copy.  
SC Go ahead.  
CAPCOM Roger. 128300000 minus 0266 minus 12  
niner 400 niner, niner, niner.  
SC Roger. 128300000 minus 0266 minus  
129400999.  
CAPCOM Right, and on that - the procedures that  
we gave you for loading a different Delta-V tailoff in the  
computer. After you get that done, I'd like you to read it  
out, Donn and check it and if you need the procedures to do  
that, I have it.  
SC Roger, Jack. This is a standard erasable  
update. I'll do it when you get that uplinking.  
CAPCOM Okay, there's no hurry on it.  
SC Jack, I would like to make a comment  
or two regarding this star horizon business.  
CAPCOM Okay, go ahead.  
SC Well, I've examined the horizon in the  
telescope and sextant and - alternate light conditions  
varying from bold darkness to broad daylight, with the sun  
overhead, and I can find no reliable line or band or anything  
in air that's repeatable at all distance sun angles. Further-  
more, I know that stars generally are not visible during the  
daytime. About the only way you can see it, is to get all  
of the optics to pull one into the sextant for you. Obviously,  
if you're doing P-23 you can't use auto optics to pull the star  
in there, so the chances of this thing ever working out are  
pretty slim, I guess.  
CAPCOM Roger, copy that.  
SC Roger, I suggest that we try one run of this  
just to prove that it won't work and then regroup and plan to  
do some star to lunar landmark business a little later on  
in the flight somewhere.  
CAPCOM Roger, we copy that.  
SC It's kind of insulting to realize that  
the same light bands and horizons are there that we reported  
back in Mercury days.  
CAPCOM Roger.  
SC Jack, do you know your update?  
CAPCOM Our assembly computer is the same as  
yours. Apollo 7, Houston.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1233500 (CDT 1:40p) 398/2

SC Go ahead.  
CAPCOM Donn, on this star horizon citing here. If you're at the roll, pitch, and yaw attitudes that we gave you and have the trunnion and shaft values that we gave you also set in. The horizon should be visible in the landmark line of sight and the star visible in the star line of sight. And Apollo 7, as we lose you here over Hawaii, we're going to try ARIA on S-band. Do you want to turn up your S-band volumn up. I think we may have better comm with ARIA than Huntsville.

COMM ARIA 3, go remote.  
CAPCOM Apollo 7, Houston through ARIA 2.  
Apollo 7, Houston through ARIA 2. Apollo 7, Houston.

SC This is 7.  
CAPCOM Donn, we lost you just over Hawaii, did you copy my remarks on the star horizon check?  
SC (garble)  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM You're loud and clear. Donn, we had an LOS through Hawaii. Did you - were you able to copy my remarks on the star horizon check?  
SC It's all here, Jack.  
CAPCOM Okay.  
SC We read you.  
CAPCOM Real fine.  
CAPCOM Wally, we lost - LOS Hawaii. Were you - did you get my comments to turn up S-band. We were trying to get ARIA 3 on S-band.  
SC Negative, we missed that. I did hear you just before this last call. You tried to talk to Donn again and came up on S-band.  
CAPCOM Okay, ARIA works so good down there in Australia on S-band that we were going to try and use ARIA instead of Huntsville, to get a little better comm.  
SC Roger, we'll try that a couple more times.  
CAPCOM Okay, real fine.  
SC What's the next time?  
CAPCOM We will have ARIA 3 the next pass over - in between - about the same place.  
SC I agree.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1234700 (CDT: 1:52p) 399/1

SC We got our entry in the flight plan Roger.  
SC Hey Jack, we are approaching perigee and  
I ought to give you GDC on fall number 1.  
CAPCOM Roger; copy.  
SC We're not pitched up too much; local  
vertical; it's about 33 - 34 degrees.  
CAPCOM Okay.  
SC This is a long pass; they might get upset  
with this thing. You've got local vertical on GDC under  
(garble)  
CAPCOM Copy that.  
SC And you can make note of the pitch  
thruster is working.  
CAPCOM Roger.  
SC Tight dead band to get this DTO done.  
CAPCOM Roger.  
SC With limit cycle on. (garble) Houston,  
Apollo 7.  
CAPCOM Go ahead 7.  
SC (garble) on that experiment.  
SC I stopped (garble) there Jack.  
CAPCOM Roger, Wally.  
SC (garble) are off.  
CAPCOM Okay.  
SC (garble) pulling up into a (garble) to  
climb and see what happens here soon. Watch the pitch rate.  
CAPCOM Roger; 1 minute LOS Texas; Tananarive at  
134 plus 27..  
PAO At 123 hours and 55 minutes we have a  
loss of contact with the spacecraft over Honduras, and I  
would say in Central America. Of increasing interest as  
we near the midpoint of the mission is the retro fire clock.  
All the while it has been counting and it now reads 135 hours  
43 minutes to retrofire. Almost as large a number as our  
elapsed clock at 123 hours, 56 minutes. This is Apollo  
Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 124:27:00 (CDT 02:33p) 400/1

PAO This is Apollo Control Houston 124 hours 27 minutes into the mission. We are on the 78th revolution around the earth and we are about to tag up with Apollo 7 via Tananarive. Our orbital elements are thusly: perigee 90.2 miles, apogee 157.3. The orbital period is 89 minutes 04 seconds.

CAPCOM Donn, we would like to wait until Guam to get your comments on the P23, on the results of P23.

SC Okay. How soon is that?

CAPCOM Guam acquisition is 124 + 54, unless you are going to be asleep then.

SC (garble)

CAPCOM Okay. Why don't you give them to us now, then? We don't want to interfere with your sleep cycle.

SC (garble) get a little tape and dump it.

CAPCOM Okay, that is fine.

SC (garble)

CAPCOM Okay Wally. We are having a hard time reading you here at Tananarive. Perhaps you could put your comments on the torquing as you went through perigee on the ESE tape, and we will dump that too.

SC (garble)

CAPCOM I couldn't pick that up. We will dump that at the next possible time.

SC Roger.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Roger. On the tape that is presently there, do you have any high bit rate recordings on it?

SC Negative.

CAPCOM Roger, copy that. We will be dumping starting at Mercury and Guam and to Hawaii if needed.

SC Roger. When do we line S-band up for the ARIA call?

CAPCOM The S-band with ARIA will be after Hawaii.

SC Roger.

CAPCOM Apollo 7, Houston. One minute LOS Tananarive. The Mercury at 124 + 51.

SC Okay Jack, we will talk to you then.

CAPCOM Roger. I'm going off duty. I'm going to give you to Ron.

SC (garble)

CAPCOM It was a good shift today, a good show.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1245300 (CDT 2:58P) 401/1

PAO This is Apollo Control 124 hours 53 minutes and we're in touch with Apollo 7 at the Mercury now. Here is how it sounds.

CAPCOM

Apollo 7 Houston through Mercury.

SC

Good evening, Ron.

CAPCOM

Good evening.

SC

I was talking to Jack about this perigee torque problem. I think that's probably a good name for it. And we'd gone across the - well, I'll tell you about the west coast going down over Mexico south. That's over the Panama Canal Zone on the last pass.

CAPCOM

Roger.

SC

We're set up for a star horizon check. We're locked up pretty tight on 356 degrees inertial zero degrees pitch. The dead band was real tight, this was in the SCS (cut out) (then repeats) The dead band was real tight, this was in the SCS attitude Hold band and I'm in dead band lowerage limit cycle on. As soon as the test was terminated I turned all SCS channels off to conserve fuel, and then I had no pitch rate, no hold rate, no yaw rate on the needles. Then about - I'd say 10 minutes - we went to perigee, it was actually to a 121 hours and 51 minutes I think it was - 123 hours 51 minutes. We start pitching up to about 3/10 of a degree per second as we approach perigee, and then it would start pitching down, and action went back down to zero again in rate. And when we actually went to drifting flight the pitch was about 35 degrees up, pitch up local vertical, it went down to about minus 40 degrees or (garbled) 20 degrees local vertical. That's where the rate stopped and then it started back up slightly. During the pitch, torque was just in pitch in that case. During the pitch, torque was just in pitch in that case.

CAPCOM

Roger, we copy.

SC

That's a new one that I've never heard of before. We suspected something like that with the S-IVB and even with the Agena, but this really showed it to us.

CAPCOM

Rog. Sure did.

SC

Another interesting thing we saw as we went down through South America, we'd seen the hurricane earlier today, with that over sight. You'd could see the eye of it as a little depressed dip in the center of the hurricane.

CAPCOM

Roger.

SC

Paul, we viewed the thunderheads as we went over South America and the flat tops are rather large ones, and they had little depressions in the center, just like the hurricane, and then we reversed the flow pattern on the flat tops, which you would expect in the southern latitude, the reverse coriolis effect.

CAPCOM

That is interesting.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1245300 (CDT 2:58p) 401/2

SC I'd never heard of that effect before  
you know, on the top of the thunderstorms.  
CAPCOM I hadn't either.  
SC All of Donn's experiments bombed.  
CAPCOM Roger.  
SC If the horizon is as good as everybody  
says it is, well we'll know (garble) the storm's center is  
exactly the way it is right now. I'm sorry to define the  
star to horizon check didn't work. The landmark optical  
tracking didn't work. We tried to use all the optics and  
they did not bring it in. Tomorrow we'll try (Too much  
static to be heard)  
CAPCOM I missed your (garble) star horizon  
didn't work, and everything after that, Wally.  
SC This is Apollo 7.  
CAPCOM Apollo 7, Houston. Go.  
SC Rog. Did you get the last?  
CAPCOM Negative, I missed everything after  
Donn's horizon not got and the star horizon didn't work.  
SC That's correct and the program 23 did  
not work and I want Donn to work on the recorder and parti-  
cularly on the sun test. We want that plan on the ground and  
I think they want it up here.  
CAPCOM Roger.  
SC There's always a question of using up  
fuel on it. We're going to try tomorrow unknown landmarks,  
known landmarks did not work, the little optics did not  
bring them in and they're hard to find. Particularly in  
the earth orbit position.  
CAPCOM Roger, we're working up the chart now,  
for you for tomorrow.  
SC Very good. How was the day back in  
Houston?  
CAPCOM Not my day here.  
SC Very good, what so bad?  
CAPCOM Apollo 7, Apollo 7, Houston opposite  
OMNI.  
SC Roger. We spend our quiet evenings in  
uh, at this time, preparing our next TV show and we'll have  
one for you tomorrow.  
CAPCOM Very good.  
SC Have you finally got the chart updated?  
CAPCOM Roger, stand by. And Walt, biomed to  
your position.  
SC Roger. We have been watching the water  
boiler pretty close. We had it going dry on us, numerous  
times for several days, and it seems to happen over a period  
of about 4 seconds (garble)

APOLLO 7 COMMENTARY, 10/16/68, GET: 1245300 (CDT 2:58p) 401/3

CAPCOM Roger, you say it seems to happen over a period of 4 seconds?

SC Oh, about 40 seconds time, if you go from operating normally to a low on the steam pressure zero.

CAPCOM Roger, we'll keep a close eye on it then.

CAPCOM Apollo 7, Houston, about 30 seconds LOS Hawaii at 09. Leave your map update and block data at that time.

SC Roger, and we won't need the right ascension Ron. We really don't have any use of it so, unless we ask for it, why don't we just skip those (garble)

CAPCOM Oh, Rog. I concur.

PAO This is Apollo Control. 125 hours 1 minute. Guam has LOS. During the passes at the Mercury and Guam, Wally Schirra discussed the - what he termed perigee torque. That's the pitch moments that the spacecraft seems to get at perigee. In the discussion of that, he described some of the weather near the hurricane. He reported the star horizon sightings didn't work, and indicated that the crew would spend a little time this evening planning tomorrow's TV show. The next station to acquire Apollo 7 will be Hawaii. At 125 hours 9 minutes, this is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1260000 (CDT 4:03P) 402/1

PAO This is Apollo Control at 126 hours. We have the tape from the Hawaii and the Huntsville pass. We'll follow that with the Tananarive pass. We'll play the tape now.

CAPCOM Apollo 7, Houston, Hawaii  
SC Roger, Ron. I'm ready for the copy of the update.

CAPCOM Roger, your map update. rev 79, GET:  
124 plus 47 plus 02. Longitude: 103.3 east.

SC Roger, ready to copy block data.  
CAPCOM Roger. Apollo 7, Houston, block data  
number 14 081 dash 3 alpha plus 312 plus 1360 127 plus 45  
plus 113382 082 dash 3 alpha plus 302 plus 1360 129 plus 21  
plus 343524 083 dash 3 bravo plus 253 plus 1340 130 plus 53  
plus 562856 084 dash charlie charlie minus 076 plus 1700  
132 plus 33 plus 151858 085 dash alpha charlie plus 072  
minus 0220 133 plus 19 plus 174077 086 dash 2 charlie plus  
184 minus 0250 134 plus 53 plus 553706. Houston, over.

SC I didn't copy the last three. Will you go through that again?

CAPCOM Roger. Area 086 dash 2 charlie plus  
184 minus 0250 134 plus 53 plus 553706. Over.

SC Roger. Reads as follows: 081 dash 3 alpha  
plus 312 plus 1360 127 plus 45 plus 113382 082 dash 3 alpha  
plus 302 plus 1360 129 plus 21 plus 343524 083 dash 3 bravo  
plus 253 plus 1340 130 plus 53 plus 562856 084 dash charlie  
charlie minus 076 plus 1700 132 plus 33 plus 151858 085 dash  
alpha charlie plus 072 minus 0220 133 plus 19 plus 174077  
086 dash 2 charlie plus 18 didn't get the last number minus  
0250 134 plus 53 plus 553706. Over.

CAPCOM Roger. Your latitude for area 086 dash  
2 charlie is plus 184.

SC Roger. Plus 184. Wally's got a failure to report on his harness. He's got one lead coming loose He put it together the last time and taped it to keep it there and apparently it's now in a state of failure down where it goes into the body connector at (garble) conditioner, and he wants to know can they receive data on him with only his three main sensors on it.

CAPCOM Roger. What's the color of the signal conditioner that there's a plug that it's going into? The white one or the yellow one?

SC It's the lower external lead.

CAPCOM Roger, stand by.

SC It's the blue signal conditioner.

CAPCOM Guam signal LOS.

CAPCOM Apollo 7, Houston. Roger. Real weak, Walt, we can work up a swap of the signal conditioners or the leads going to the signal conditioners and we'll try to pass

APOLLO 7 COMMENTARY, 10/16/68, GET: 1260000 (CDT 4:03P) 402/2

CAPCOM that up to you over Tananarive.  
SC Okay, thank you.  
CAPCOM Sorry, about that.  
SC Roger, thank you.  
SC This is Apollo 7. How do you read me,  
Ron.  
CAPCOM Apollo 7, Houston. We're reading you  
through Huntsville now. We had ARIA just between Hawaii and  
Huntsville. When you were reading back on the block data  
and it was good at that time.  
SC (Too much static to be heard)  
CAPCOM Apollo 7, Houston. Did you call?  
SC Take it, Roger, (garble)  
CAPCOM Roger. About 1 minute to LOS now at  
Tananarive at 01.  
SC Roger. Did you catch our TV pass today?  
CAPCOM Affirmative, and a good one again. The  
quality wasn't quite as good as it was the other 2 days.  
I've got some dope on that ALC switch I'll try to back up to  
you sometime this evening.  
SC Okay, it never seems to work as good with  
the ALCS.  
CAPCOM Apollo 7, Houston through Tananarive.  
SC Roger, Ron, how do you read?  
CAPCOM Not too bad this time, Walt. Have a  
little question on the chlorination. Have you chlorinated  
yet?  
SC No, and it's not our intention to chlor-  
inate today, we chlorinated yesterday. You don't have any  
objections to chlorinating every other day, do you?  
CAPCOM Rog. I understand you're intent on the  
thing. Do you still have a bad taste in it? Is this the  
reason?  
SC It's just now trying to (garble) about  
cold and the water has tasted horrible (garble) you know like  
trying to drown the cold by drinking it (garble) and when  
we chlorinate the taste of it afterward is very bad for  
several hours and it's not really good for a bad cold.  
CAPCOM Okay, we understand, and do not chlorinate  
today. We'll pass it today and chlorinate tomorrow.  
SC Okay, very good, I think that's about  
(garble) we'll catch it and chlorinate tomorrow. Got two  
questions for you Ron, and that's about it.  
CAPCOM Say it again.  
SC What is the precise inclination about  
a secondary reactivator charge update and for RCS deorbit  
onboard?  
CAPCOM Roger. What is the precise inclination  
of your orbit? Is that what you said?

APOLLO 7 COMMENTARY, 10/16/68, GET: 1260000 (CDT 4:03P) 402/3

SC Right, and Wally would like to hear the  
(garble) biomed sensors (garble) shoot it up again.

CAPCOM Roger, we'll get your inclination on  
your biomed sensors. Wait, your inclination is 31.25.

SC Roger.

CAPCOM And on your biomed sensors, Walt, we want  
to use - or use the two good ones in the middle of your chest  
and those two good ones will have to be connected to the blue  
signal conditioner, which I believe we're going to have to  
switch to wires that go into the signal conditioners.

SC Okay, you want the two center leads to  
go to the blue signal conditioner, right?

CAPCOM Yeah, that's affirmative.

SC Okay, that means Wally will have to connect  
the connector of the other signal conditioner and he will have  
(garble) to the two.

CAPCOM That's affirmative. That's affirmative.

SC Okay, He'll try it.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET 1261000 CDT 4:13p 403/1

SC (Garbled)  
CAPCOM That's affirmative.  
SC Okay, he'll try, if that doesn't work  
we will just have to write it off, because he has been  
trying to piece that thing together for the last 126 hours.  
We tried.

CAPCOM Roger. Apollo 7, Houston. One minute  
LOS. Mercury at 24.

SC And as soon as you can get it, we would  
like an update for onboard RCS chart.

CAPCOM Wilco. We will have it available at  
Mercury

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1262400 (CDT 4:25p) 404/1

PAO This is Apollo Control at 126 hours, 24 minutes. Apollo 7 coming up on the Mercury now. This is a quiet time in the flight plan, no activities are scheduled. Apollo 7 just coming out of the night side as it acquires at Mercury. Mercury has acquisition now, we'll stand by for a call.

CAPCOM Apollo 7 Houston through Mercury.

SC Roger, Ron

CAPCOM Okay, I got your RCS update for figure three dash one.

SC Roger, go with it.

CAPCOM Roger, at 126 hours total is 688 pounds SCS red line 601, DAP red line 536, HYBRID 263 and be advised that quad A is still right on the SCS red line, the rest of them are above.

SC Quad A, I thought quad C were the first one we were going to be switching.

CAPCOM Rog. stand by, Wall.

SC Okay, Ron, but I was given some numbers today that what the onboard meters should read before they switch to secondary. Is that going to be open loop and when I get down to that reading I switch or will you be giving me later dope on switching.

CAPCOM We're keeping track on it, Walt, and will probably be giving you later dope on it but those are the figures we have at this time.

SC Roger, and I was told to see when it was getting closest to getting on the secondaries.

CAPCOM That is affirmative. As far as your on board reading is concerned its 54 percent for C, 49 for D, Delta, and A its 46 percent.

SC Roger

CAPCOM Apollo 7 Houston, request you cycle 02 tank two fan on for five minutes and off.

SC Roger, sir.

CAPCOM This pass when you get a chance you can read out your service module RCS propellant quantities and your system test meter 5A through D and 6A through D.

SC Roger, and I'll give you the queries right now before I forget it, can you have them standing by when we are coming over Hawaii to check Wally's biomed read-out.

CAPCOM Will go

SC Okay, A through D reading 51 plank 55 plus 58, over.

CAPCOM Roger, copy

SC Can I check in the number for my chart?

CAPCOM Roger, the total for your chart is 688.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1262400 (CDT 4:25P) 404/2

SC Roger, 688. Copy. I will give you the  
test meter readouts.

CAPCOM Roger.

SC Okay. For five three is five volts.  
Five three is five volts. Six dog five, six Charlie four  
point eight. Six Baker five, six Able five. Over.

CAPCOM Roger. You have five Alpha.

SC Okay, five Alpha is one point seven.

CAPCOM Say again.

SC Which should be on the order about 70 -  
we will be staring at, I believe.

CAPCOM Roger, was that one point seven?

SC That is affirmative. One point seven.

CAPCOM Roger. And I have your ground computer  
to usable RCS propellant remaining if you would like those.

SC Okay, go with them.

CAPCOM Oh Roger. It will be 46 percent, 50 per-  
cent, 45 percent and 52 percent A through D.

SC 46 50 45 52.

CAPCOM Roger.

SC How did you ever get Baker to be 50 and  
Dog to be 52?

CAPCOM I am not quite sure, but it works out that  
way.

SC (Garbled)

CAPCOM LOS (garbled)

PAO This is Apollo Control 126 hours 32 min-  
utes into the mission. Mercury has LOS. During this pass  
we updated the spacecraft with ground computed reaction control  
system propellant quantities and we got a readout from the  
onboard RCS quantities. This is the sleep period for the  
command module pilot, Donn Eisele. Hawaii will acquire at  
126 hours 43 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET 1264300 (CDT 4:45 p) 405/1

PAO This is Apollo control at 126 hours  
43 minutes into the mission, Apollo 7 coming up on the  
Hawaii station. The Huntsville tracking ship has over-  
lapping coverage here, we'll stand by through this pass.  
CAPCOM Apollo 7, Houston, through Hawaii,  
standing by.  
SC Roger, we read you loud and clear.  
CAPCOM Roger, loud and clear.  
SC Hey, Ron, log the CMP with how many.  
CAPCOM Say again.  
CAPCOM Apollo 7, Houston, say again.  
SC Would you log CMP with about 50 clicks  
for the last 5 hours.  
CAPCOM 50 clicks you say in the last 5 hours?  
SC Affirmative.  
CAPCOM Roger.  
SC And CDR 30.  
CAPCOM Roger.  
SC LMP 15.  
CAPCOM Roger.  
SC How's Sir John doing with my biomed?  
CAPCOM Roger, looks like you're getting the  
auxiliary, the ones under your arms there going into the  
blue signal conditioner which is okay, we can do - we can  
do with that one.  
SC That's what you're trying for isn't it?  
CAPCOM Not quite, but that's okay. With what  
we're trying (cut off).  
SC I'll bet you'll have the (garble) to  
go into the black and the two auxiliary into the blue.  
CAPCOM No, we thought the broken wire was from  
the two external ones (cut off).  
SC I think the low external is broken.  
CAPCOM Okay, okay, I see what you're saying  
the lower external is broken, but what we're trying to do  
was kept the two external ones to go into the blue signal  
conditioner.  
SC That's how they were originally.  
CAPCOM Yea, right, but we wanted to switch the  
pieces of wire that go into the signal conditioner, the  
auxiliary wires that go into the signal conditioner, the  
the black signal conditioner we wanted to use that lower  
piece of the wire and hook that piece of the wire to the  
center sensors.  
SC I won't have you change my spark plugs.  
CAPCOM It's working okay the way it is, it's  
fine.  
SC Okay.

APOLLO 7 COMMENTARY, 10/16/68, GET 1264300 (CDT 4:45 p) 405/2

CAPCOM The good doctors say, thank you.  
SC Roger, you know Wally, anything for the  
doctor.  
CAPCOM Roger.  
SC Say, I've kind of lost track, is this  
day 8 or day 9. I have to, wait, Walt - I got a time  
CAPCOM hack to end of mission, if you'd like that.  
SC I was trying to think of how to get a  
big clock to count down.  
CAPCOM (laughter).  
SC Go ahead.  
CAPCOM Roger, stand by for 132 hours and 51  
minutes. 5, 4, 3, 2, 1, mark 123 hours and 50 minutes.  
SC Beautiful, is that drogues or mains.  
CAPCOM That's to GETI burn 8.  
SC Oh, we got more to go.  
CAPCOM Yea.  
SC What's the 6 to 8 forecast on hurricane  
what's it's name. Apollo 7, Houston.  
CAPCOM Apollo 7, Houston, Huntsville (garble)  
CAPCOM am I getting through to you.  
HTV Affirmative.  
CAPCOM Apollo 7, Houston.  
SC Apollo 7, Houston, how's (cut off)

BND OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1265300 (CDT: 4:55p) 406/1

CAPCOM Apollo 7, Houston. Apollo 7, Houston.  
Huntsville, let me know, Houston, is Apollo 7 reading us.  
HTV Houston, Huntsville. Apollo 7 answered  
once from down-link S-band, and we haven't heard him since.  
CAPCOM Roger.  
HTV Houston, Huntsville. They are now  
answering you on S-band down-link.  
CAPCOM Roger, Wally, be advised on Gladys.  
We're not sure whether to move your boat or move your landing  
point yet.  
HTV Huntsville, LOS.  
PAO This is Apollo Control at 126 hours  
54 minutes. The next station to acquire will be Tananarive  
at 127 hours 36 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1273600, (CDT 5:40p) 407/1

PAO This is Apollo Control at 107 hours 36 minutes. Tananarive is acquiring Apollo 7 now in its 81st revolution.

CAPCOM Apollo 7 Houston through Tananarive.

SC Roger, Ron.

CAPCOM Rog. I have your present battery status.

A half hour's remaining.

SC Rog. Read it.

CAPCOM Roger. Alpha 31.4, Bravo 29.0, Charlie

39.5.

SC Roger, I'll make a note on my report. The way those numbers change, I which we could get the statisticals a bit earlier sometime.

CAPCOM I missed that, say it again.

SC Roger, I'll give you our numbers.

CAPCOM Roger.

SC (garble) to Tananarive (garble) dumped

the waste water there. (garble) disconnect. It failed to a 2B setting over by the waste water control panel, and when we dumped the waste water, a large quantity of water formed there. (garble) run that and it performed pretty good (garble) only (garble)

CAPCOM Apollo 7, Houston, I can't make too much out of that. There was a large puddle of water by the water tank, waster water disconnect.

SC Roger, affirmative, and Walt was putting a different type (garble) by the water control panel to (garble) the leaking there (garble).

CAPCOM We'll play back our tapes. Maybe we can read it off the tapes. I couldn't read you that time.

SC Ron, we got a very nice picture as we went over (garble) today, but we got there about (garble)

CAPCOM Roger, that's good.

SC The magazine was 97 to negative (garble)

CAPCOM Roger.

CAPCOM Apollo 7, Houston, Did you receive my comments on Hurricane Gladys?

SC Roger, I understand it's in the Gulf.

CAPCOM Roger. In reality, it's due to hit Tampa at 1800 Z tomorrow, on Thursday.

SC How's the Houston weather, Ron?

CAPCOM Apollo 7, Houston 1 minutes LOS Mercury

at 59.

PAO This is Apollo Control at 127 hours 43 minutes. Very noisy circuits on that pass. CAPCOM, Ron Evans, passed up the battery status to the crew, gave them the amount of ampere hours remaining in their batteries. Walt Cunningham gave a report on the continuing water problem inside the cabin. Much of it was unreadable, but we did copy it that there is

APOLLO 7 COMMENTARY, 10/16/68, GET: 1273600 (CDT 5:40p) 407/2

PAO a puddle of water by the fitting of the  
waste water disconnect. Walt also reported getting several  
good pictures of the West Coast of Chili. The tracking ship  
Mercury will acquire Apollo 7 next. That will be at 127 hours  
59 minutes. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1275900 (CDT 6:00p) 408/1

PAO This is Apollo Control 127 hours  
59 minutes. The Mercury has acquired Apollo 7. There is  
no overlapping coverage at Guam on this pass. We'll stand  
by through the Mercury.

CAPCOM Apollo 7, Houston through Mercury.

SC Roger, loud and clear.

CAPCOM Roger, same here. I have a one line  
flight plan update.

SC Go ahead, Ron.

CAPCOM At time 130 plus 00 an oxygen fuel  
cell purge.

SC Roger, at about half way mark go to

fuel cell purge.

CAPCOM Roger. And Wally if you want to go

back to Walt on the biomed that'll get us squared away on  
the flight plan again.

SC Okay. You got it.

CAPCOM Roger, copy.

SC Go ahead. One more bag failure, orange  
juice reconstitutable bag. I think Walt was trying to add  
some prune juice to it. It was the kind of thing in my  
dinner too.

CAPCOM You didn't quite get the PT then, did  
you?

SC Oh, very good. You're fighting back.

CAPCOM Apollo 7, Houston. We've got about  
70 knots of wind in the eye of Gladys.

SC Roger.

PAO Apollo Control 128 hours 6 minutes.  
The Mercury has LOS now. We passed up a flight plan update  
asking them to have an oxygen purge in a fuel cell at  
130 hours. And Walt Cunningham reported failure of an  
orange juice bag. The next station to acquire will be  
Hawaii at 128 hours 17 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68 GET: 1281700 (CDT 6:20p) 409/1

PAO This is Apollo Control at 128 hours and 17 minutes and Apollo 7 has just been acquired by the Hawaii station. We'll monitor this pass.

CAPCOM Apollo 7 Houston, Hawaii standing by.

SC Roger

CAPCOM Roger, we read you.

SC Hey, Ron, is there nothing to be done to come up on the check on the next pass over the Mercury, okay?

CAPCOM Rog, that's fine.

SC Okay, we are trying to eat dinner now.

CAPCOM Roger

PAO One minute to LOS Restone at 34. This is Apollo Control 128 hours and 23 minutes. Hawaii has LOS. Walt Cunningham reported that he and Wally Schirra were eating dinner and would postpone the environmental control system redundant component check until over the Mercury on the next rev. The Redstone will acquire Apollo 7 very briefly on this revolution. The maximum elavation in the Redstone range is a degree and a half. That'll give us about three minutes worth of acquisition time. Redstone due to acquire at 128 hours, 34 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1283400 (CDT 6:35 p) 410/1

PAO Apollo control at 128 hours 34 minutes  
and Apollo 7 is tagging up at the Redstone now.

CAPCOM Apollo 7, Houston, Redstone standing by.

SC Roger.

CAPCOM Roger.

SC Hey, Ron, can you give us a read out on  
our O2 manifold pressure on my mark.

CAPCOM Wait, Wally, I don't have it yet - Wait  
we've got kind of a low signal strength we're trying to get  
high bit rate now.

SC garble.

CAPCOM Rog, I'll let you know if we get it.  
Apollo 7, you want to try opposite OMNI - Rog, we're reading  
105 now.

SC garble.

CAPCOM Wait, Wally, we've lost it again. Is  
that one minute to LOS, we'll pick it up over Mercury next  
time.

PAO This is Apollo control at 128 hours 37  
minutes and Apollo 7 is beyond Redstones range. Coming up  
on the end of the 81 revolution. Apollo 7 will miss the  
Ascension station and Tananarive station this time, that  
makes the next station to acquire the tracking ship Mercury  
in the western Pacific at 129 hours 33 minutes. This is  
mission control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1293400 (CDT 7:40p) 411/1

PAO This is Apollo Control at 129 hours  
33 minutes. Apollo 7 coming up on the tracking ship Mercury  
now after a long spell of not being in contact with the  
station. Mercury has acquisition, we'll stand by.

CAPCOM Apollo 7, Houston through Mercury.  
SC Roger, Houston.  
CAPCOM Rog, loud and clear.  
SC Want to make a read-out of our manifold  
pressure.

CAPCOM Rog, stand by. We have no data yet.  
CAPCOM 7, Houston. Looks like we've got a  
processing problem here for a little bit. I've got the results  
of what we feel on the evaporator, if you would like to hear  
it?

SC Roger, I'd be very interested.  
CAPCOM Roger, when we're operating under low  
cycle heat loads - cycling heat loads as we have been doing,  
the evaporator will dry itself out. This is basically caused  
by the evaporator boiling more water under low heat loads  
than is being supplied to it. The end result is drying of  
the evaporator. If the evaporator is left in auto the  
back pressure valve remains open and completely evacuates  
the evaporator. When the water valve is now opened either  
automatically or manually, the first water that goes into  
the evaporator flash freezes, this stops any more water  
from getting into the evaporator until it thaws out. Now  
a couple of more comments. We feel boiler will work normally  
should it be called upon to take the entire heat load.  
Since the radiator had demonstrated that they could handle  
the heat load should the evaporator foul up again, it should  
be reserviced and turned off until it is needed.

SC Roger, Ron, there's only one comment  
I have to add to that - that makes sense I assume with high  
heat load then we wouldn't have any problem. We do notice  
the difference in temperature in the spacecraft when the  
evaporator running or not, but it seems like it runs a little  
bit all the time when it's on the line. The glycol evaporator  
outlet temp is regulated down under 45 most of the time.  
In the drop line completely (garble) and the glycol evaporator  
outlet temp of 50 to 52 and sometimes a little higher.

CAPCOM Roger, we copy that.  
SC So next time it shuts down we will  
service it and we will stand by on it.

CAPCOM Roger.  
SC Have any data yet?  
CAPCOM I got a little bit right - we're sending  
on Have the Command pilot stand by.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1293400 (CDT 7:40p) 411/2

CAPCOM Okay, looks good. We're reading 104  
now. SC Roger, what are you reading now?  
CAPCOM 103.  
SC Roger, the evaporator check is A-okay.  
CAPCOM Roger, wow.  
SC He's close to being fired, Ron. How

do I get rid of him?

PAO This is Apollo Control 129 hours  
40 minutes. The Mercury has LOS. Guam does not acquire on  
this the 82 revolution. The next station to acquire will be  
the tracking ship Redstone at 130 hours 5 minutes. We have  
two clocks from the Control Center supper imposed on the  
world map on you television monitor in the news center. The  
one at the top is the elapse time since lift-off. The one  
at the bottom is counting down to the de-orbit burn. These  
two clocks should read out the same at 129 hours 50 minutes.  
About 9 minutes from now both clocks should read 129 hours  
50 minutes. The mid point between lift-off and SPS burn  
number 8, the de-orbit burn. The mission will continue for  
another 25 or 30 minutes after that de-orbit burn for the  
re-entry phase. But we are rapidly coming up on the mid  
point between lift-off and de-orbit. At 129 hours 42 minutes  
this is Mission Control, Houston.

end of tape

APOLLO 7 COMMENTARY, 10/16/68, GET 1295000 CDT 7:50p 412/1

APO This is Apollo Control 129 hours  
49 minutes 37 seconds, coming up on the mid-point between  
lift off and the nominal deorbit burn. Mark 1295000

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68 GET: 1300400 (CDT 8:05p) 413/1

PAO This is Apollo Control at 130 hours, 4 minutes coming up on five minutes which will be the nominal point in the mission from lift-off to splash. Apollo 7 about to be acquired at Redstone now. The best estimate at present is that the reentry time from de-orbit burn to splash will be approximately 30 minutes. It can't be figured precisely at this time due to atmospheric elements and dispersion that might occur in the de-orbit burn but it will be on a order of thirty minutes; so we are at the mid-point now for lift-off to splash. Apollo 7 has been acquired now, although there has not been a call go up yet, we will stand by through this pass at the Redstone.

CAPCOM Apollo 7 Houston, Redstone.

SC Roger

CAPCOM Apollo 7 Houston, we would like to cycle 02 tank 2, turn it on shortly and then we would like to see the off before we complete this pass.

SC Was that the 02 fan, Ron

CAPCOM I'm sorry, 02 fan

SC Rog. I'm running a DTO now, the one for 60 percent on the cryo tank. I've got both fans, both heaters off. I'm assuming when I finish this run of it, that DTO is complete. Can you verify it for me?

CAPCOM Rog. Let me get my light on the fan switcher and we'll verify that chart. Apollo 7 Houston.

SC Go ahead

CAPCOM Rog. That does complete the 60 percent but we still have one more at the low end prior to reentry where it doesn't work out, doesn't conflict.

SC The onboard copy of the DTO which I see you have there shows only 90 plus minus 5 and 60 plus minus 5 or last day.

CAPCOM Roger, we'll check on it now. Walt, it looks like on the DTO there "or last day" should have been "and last day."

SC Okay, I'll give you a hack on how long it takes to run this and we ought to find out if we can't work it in the last day, we'll see.

CAPCOM Oh Roger, thank you.

SC I started it at about 129 hours and 45 minutes, I guess.

CAPCOM Roger

SC Ron, do you have time to give map update?

CAPCOM Roger. Apollo 7 Houston, you ready to copy?

SC Go ahead

CAPCOM Roger, Red 82 GET 129 plus 13 plus 13, longitude 35.1 east.

APOLLO 7 COMMENTARY, 10/16/68 GET: 1300400 (CDT 8:05p) 413/2

SC Roger, you cut out, could you try it  
again?  
CAPCOM Roger, GET 129 plus 13 plus 13, longitude  
35.1 east, rev 82.  
SC Rog, I got it.  
CAPCOM Apollo 7 Houston 30 seconds LOS Ascension  
at 31.  
PAO This is Apollo Control, 130 hours, 13  
minutes Redstone has LOS. The next station to acquire will  
be Ascension at 130 hours, 31 minutes, Apollo 7 completing  
its 82 revolution now.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1303100 (CDT 8:35P) 414/1

PAO This is Apollo Control at 130 hours  
31 minutes. Apollo 7 is in its 83rd revolution of the earth  
now, and coming up on the Ascension Island tracking station.  
We'll stand by through this pass.

CAPCOM Apollo 7, Houston through Ascension.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston.

CAPCOM Ascension M&O, Houston CAPCOM.

CAPCOM Apollo 7, Houston.

ASN Voice Control, this is

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston transmitting in the blind.

We have fuel cell 02 flow line.

PAO This is Apollo Control at 130 hours  
39 minutes. Ascension has LOS now. A network problem during  
this pass prevented us from establishing voice contact with  
the spacecraft. We were unable to get the circuit restored  
prior to LOS. The next station to acquire will be the tracking  
ship Mercury. At 132 - stand by - 131 hours 07 minutes, this  
is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1310700 (CDT 9:10p) 415/1

PAO This is Apollo Control at 131 hours  
7 minutes into the mission. Apollo 7 is in it's 83 revolution  
and is approaching the tracking ship Mercury in the western  
Pacific. Mercury has acquisition now, we'll stand by.

CAPCOM Apollo 7, Houston through Mercury.

SC Roger.

CAPCOM Roger, read you.

SC Roger.

CAPCOM 7, Houston. Got a couple of onboard  
read-outs I would like to cut.

SC Go ahead.

CAPCOM Roger, pyro battery voltages and  
Bat C voltage.

SC Yeh, Ron. We read the pyro battery  
voltage a little earlier this evening. We pass it down. I  
guess it was before your shift. They were both reading  
37 volts.

CAPCOM Roger. I missed it, sorry.

SC Battery C is 36 volts.

CAPCOM Roger, copy. And could you check your  
02 flow or 02 purge switch on fuel cell 2.

SC Thank you, Ron. Okay, Ron, what are  
you guys reading now for the 02 tank pressures?

CAPCOM 02 tank pressures.

SC Right, I've got the heaters band on.

CAPCOM Apollo 7, Houston. We're reading 846  
on tank 1 and 827 on tank 2.

SC Roger, thank you.

CAPCOM 7, Houston. The 02 flow looks good now  
on fuel cell 2, and you can continue with 3. And we could  
use a general run down on your crew health, the medication  
and the amount of sleep, what have you.

SC Well, this is the LMP. I had another  
Actifed. let's see night before last. That makes two I've  
had. My ears are getting more difficult to clear than they  
have been. Sometimes I can clear one, sometimes I can't. I  
feel very good otherwise. I'm a little bit concerned about  
the lack of any nose drops since there's aspirin onboard. And seems  
to me if we had something like that we'd be able to at least  
make a stab, and let my ears get cleared on reentry.

CAPCOM Roger, copy that. Opposite OMNI,  
Apollo 7.

SC Roger, we just got a feeble lines on  
frame 97, 90 degrees clear. That is a 1310, with 11  
minutes 30 seconds.

CAPCOM Roger.

SC Yeh, Ron. My sleep last night I got

APOLLO 7 COMMENTARY, 10/16/68, GET: 1310700 (CDT 9:10p) 415/2

oh, about 7 hours of sleep which is good sound sleep The best I got since coming up here, I guess.

CAPCOM

Roger.

SC

We've all been averaging good sleep lately. Donn's been sleeping much better. He's the one who's way behind on sleep. And because we switched his day to go to bed at night at 4 o'clock which is pretty clever for anybody to try.

CAPCOM

Right.

SC

And he is finally acclimated to that schedule. And all three of us have varying forms of cold - various forms of cold. Mine is still a head cold, and it's about my problem. I'm off pills these days.

CAPCOM

Roger.

SC

What do the Doctors have in mind for head clearing on re-entry?

CAPCOM

We're counting on three actified.

SC

You mean three per man.

CAPCOM

Negative. One each, Donn.

SC

Why don't you suggest to 'em that they do as flight surgeons for airplane drivers, I haven't seen that work yet.

CAPCOM

Roger. We could use a hole in the helmet probably, couldn't we?

SC

I think that's what you're going to find. We're putting in with our helmets off.

CAPCOM

Roger, we will advise.

SC

You could try. How's that for a B52 status report?

CAPCOM

Apollo 7, Houston. I've got a couple of comments on TV.

SC

Go ahead.

CAPCOM

Roger. On the ALC switch.

SC

(garbled)

CAPCOM

Roger. On the ALC switch have it out, ALC out when the windows or fluid lights are in the field of view or when your handing across the spacecraft. This will give a better picture of the darker areas.

SC

Roger.

CAPCOM

And of course have it in when light sources are not in the field of view.

SC

Go ahead.

CAPCOM

And when the flash light - down there - when the flash light shines directly on an area this area only shows up as a white blob. So it's good for pointing, but it doesn't help the picture at all.

APOLLO 7 COMMENTARY, 10/16/68, GET: 1310700 (CDT 9:10p) 415/3

SC Okay. We'll follow you up and - on  
our screen transmitting tomorrow morning.

CAPCOM Roger. Walt, the doctor recommends  
one more actified prior to sleep tonight, if you feel necessary.

SC I don't feel like it's going to do  
me a bit of good.

CAPCOM Roger. We still feel it'll probably  
help a little though.

SC We had two or three days, and then  
after that we had to do it all over again. We don't have  
that much onboard. We've got it for pain and sea sickness  
and stuff like that, but nothing for colds.

CAPCOM Roger. We're kind of in the same  
position down here also when you get a cold.

SC Rog, that's right.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68 GET: 1311100 (CDT 9:20p) 416/1

CAPCOM Apollo 7 Houston, one minute LOS Redstone  
at 39

the East China Sea.

CAPCOM

SC

East China coast

CAPCOM

PAO

Say that again, I missed that.

The (garble) I recorded are just off the

Roger

This is Apollo Control 131 hours and 19 minutes. Guam has LOS now. That was a fairly long pass over the Mercury and the Guam. We got some onboard readouts on the battery voltages and gave the crew some oxygen tank pressures at their request. It's pretty good communication this time. I'll hit the high spots however of their health reports. The lunar module pilot, Walt Cunningham, reported he has taken two decongestant tablets to date in the mission that - the last one was the night before last. He voiced the wish that he had some nose drops onboard with him. Said he got about seven hours sleep last night, sound sleep, he thought it was the best sleep he'd had yet. Wally Schirra, the commander, said he believes all of the crewmen have been averaging good sleep lately. He reported he still has his head cold, that he's off pills and he indicated that the crew may reenter with their helmets off so that they will be able to relieve the pressure on their ears if their ears are still stopped up at the time of reentry. There was also a discussion, we passed up some advice to them that may enable better TV pictures. Persons in the Houston area will have a choice to make. Tomorrow morning they can either step outside and attempt to see the spacecraft pass over in the Houston or they can stay in and watch the television. The television is due at 7:15 AM Central daylight time that is the same pass on which Apollo 7 may be visible. The S-IVB, the second stage of the launch vehicle may also be visible from Houston tomorrow. The S-IVB will approach from the Southwest at 7:10 AM, reach a maximum elevation of 27 degrees due South at 7:14 AM and disappear over the horizon due East at 7:17 AM. Apollo 7, the command and service module will approach from the Southwest at 7:16 AM, reach maximum elevation of 30 degrees due South at 7:20 AM and leave due East 7:23 AM. The next station to acquire will be the Redstone at 131 hours, 39 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1313900 (CDT 9:45P) 417/1

PAO This is Apollo Control at 131 hours  
39 minutes. Apollo 7 coming up on the Redstone now. We'll  
listen.  
CAPCOM Apollo 7, Houston. Redstone standing by.  
SC Roger.  
CAPCOM Roger. Loud and clear.  
CAPCOM Apollo 7, Houston. We'll log about now  
for a completion of your stratification tester.  
SC Roger.  
CAPCOM The good old U.S.A. got another gold  
medal tonight. Tommy Smith in a 200 meter race, in a time  
of 19.78.  
SC My gosh, they're a new (garble)  
CAPCOM Rog.  
CAPCOM We just got another one. Bob Seigrew,  
in a pole vault with a height of 7 feet 8-1/2 inches.  
SC Say things are at a new (garble) down  
there?  
CAPCOM Rog.  
CAPCOM Apollo 7, Houston. 1 minutes LOS Redstone  
at 04, and Wally  
SC Roger, will that be too much panic,  
thank you.  
CAPCOM Roger. You can rest in peace tonight.  
The Chronicle described the flight of Apollo 7 to date as  
high quality.  
SC Wow, boy, we ought to put one on their  
head.  
SC We're over the hill on the half way any-  
way, and that's a good sign.  
CAPCOM That's affirmative.  
PAO Apollo Control at 131 hours 47 minutes.  
The Redstone has LOS as Apollo 7 nears the end of its 83rd  
revolution. The next station to acquire will be Ascension.  
At 132 hours 04 minutes, this is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1320400 (CDT 10:10p)418/1

PAO This is Apollo Control, 132 hours, 4 minutes. Apollo 7 in its 84th revolution now. Ascension has acquired, we'll stand by.

CAPCOM Apollo 7 Houston through Ascension.

SC Roger, Ron, good morning.

CAPCOM Good morning. How's the night's sleep?

SC (unreadable)

CAPCOM Say again, Donn.

SC We were just wondering who were the lastest gold medal winners down in Mexico.

CAPCOM Roger, like to check a couple of switches there first and then I'll pass it up to you. These secure 02 tank one and two heater switch to the auto position.

SC Auto, one in auto and two OFF.

CAPCOM Roger, are those heaters or fans.

SC Fans

CAPCOM All right, those are - fans are correct.

SC Right.

CAPCOM How about the heater switch? Are they both in auto?

SC Auto ON

CAPCOM Negative, we want them in the AUTO position. Donn, we had a couple of gold medal winners down there tonight. Bob Secru, Seagren, I'm sorry, won at pole vault at 17 feet, 8 and a half inches.

SC Pretty tall reach.

CAPCOM Rog. And Tommy Smith won the 200 meter in 19.78.

SC (garbled)

CAPCOM Roger, and opposite omni

SC Hello, Houston to Apollo 7.

CAPCOM Houston, go

SC Roger, regarding the antibiotics and so forth, one of the reasons we don't have a temperature up here our thermometer is broken. We can't get it to go over 94, so we don't know if we've got a fever or not.

CAPCOM Rog, understand. Apollo 7 Houston

SC Rog. Go.

CAPCOM Rog. Be advised on your CMC power up, we'll update you a little later, but what we are going to try to do is to power up over one station and then power it down over the other station so we can take a look at some of the bits in there.

SC Rog, understand.

CAPCOM And we got a pretty good idea of the other two guys health. Can you give an account of your run down, health, medication and sleep?

SC Rog, I just woke up. I got a good solid

APOLLO 7 COMMENTARY, 10/16/68, GET: 1320400 (CDT 10:10p)418/2

eight hours sleep and Walt and Wally are both in the sack. And I don't know, I think they may have called earlier with theirs.

CAPCOM Yeah, we have theirs, but we didn't get yours.

SC Okay, at 132 hours they each had two aspirins and LMP recorded fifteen clicks of water.

CAPCOM Roger.

SC And - I haven't had a drink yet and I haven't taken any medicine lately.

CAPCOM Roger.

SC Well, also the commander had twenty clicks of water at 13130.

CAPCOM Roger. About 30 seconds LOS Mercury at 41.

SC Roger.

CAPCOM Apollo 7, Houston, you might try center position anomaly.

SC Center position of what?

CAPCOM Biomed switch.

PAO This is Apollo Control at 132 hours, 13 minutes, ascension LOS. That was the command module pilot, Don Eisele in this pass over ascension. He's just up from his sleep period. He reports that Wally Schirra and Walt Cunningham have got into their sleeping bags, settling for 8 hours. He reported they - each took two aspirins at 132 hours elapsed time. That is the time their sleep period started. He reported he had gotten 8 solid hours of sleep, and that he has taken no medication lately. Also he reported that the thermometer is broken so they can't tell whether they have fevers or not. The next station to acquire will be the Mercury at 132 hours, 41 minutes. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1324100 (CDT 10:45 PM) 419/1

PAO This is Apollo Control at 132 hours  
41 minutes. Apollo 7 is at Mercury now.

SC (garble) when we got  
into altitude at the (garble) and everything (too much static  
to hear) at the horizon and such in the sextant. The fixed  
line of sight was very interesting. In fact it was pretty  
hard to pick out anything that you could use. There was one  
line that might pass for a repeatable line, but it was pretty  
tenuous. Subsequent to that, I did a T-52 auto optics check  
and found that the star was up there, but it was at a slightly  
different shaft and trunnion angle. That was the reason we  
didn't pick it up.

CAPCOM Roger.

SC So the gist of it all was that I don't  
think it was a too worthwhile or realistic way to perform that  
program or it wasn't designed to be used that way so I suggest  
that if we have any time or fuel to play at this angle, we  
try to use the lunar landmarks and stars.

CAPCOM Roger.

SC Houston, Apollo 7.

CAPCOM Houston, go.

SC Roger, you were making some comments  
a while ago regarding power up and power down on the computer.

CAPCOM Rog.

SC When did you want to do that? Are you  
talking about the normal power up for the next sequence of  
activity?

CAPCOM Negative. The CMC update is about 135  
hours, somewhere around there.

SC Oh yeah. Okay. We could do it now and  
power down over the Canarys.

CAPCOM Rog. Stand by.

CAPCOM Rog. Donn, you can go ahead and power it  
up now. We'll power it up over Guam and then power down over  
Redstone.

SC Okay. Well, that's cute. We got a re-  
start light.

CAPCOM Rog. That's normal.

PAO This is Apollo Control, 132 hours 49 min-  
utes. Guam has acquisition now. We'll continue with this  
pass.

CAPCOM Apollo 7, Houston, 1 minutes to LOS  
Redstone at 13.

SC Roger.

CAPCOM And you passed the half-way mark while  
you were asleep, there.

SC Yeah, that's great. Do you want me to  
power down the computer now or wait?

APOLLO 7 COMMENTARY, 10/16/68, GET: 1324100 (CDT 10:45 PM) 419/2

CAPCOM  
Redstone.

Negative. Let's wait until we get to

SC

Okay, I'll just let it simmer.

CAPCOM

Roger.

PAO

This is Apollo Control, 132 hours 54 minutes. Apollo 7 over the horizon at Guam now. The Redstone will acquire at 133 hours 13 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1331300 (CDT 11:15p) 420/1

PAO This is Apollo Control 133 hours 13 minutes into the mission of Apollo 7. We now have acquisition at the Redstone tracking ship. Let's listen in.

CAP COM Apollo 7, Houston through Redstone.

SC Roger Houston.

CAP COM Roger, loud and clear. Apollo 7, Houston you can power down anytime of the CMC and just prior to LOS sometime.

SC Okay.

CAP COM Apollo 7, Houston, opposite omni.

SC Roger, Houston Go.

CAP COM Rog, looks like your back pressure valve is open now. Would you manually close the back pressure control valve?

SC Roger, close it.

CAP COM Wait 15 minutes then re-service it and leave it off the line.

SC Okay. Would you log me ... water gun and two aspirin, please?

CAP COM Missed the clicks, say again.

SC 30 clicks on the water gun and 2 aspirin.

CAP COM Roger.

PAO This is Apollo Control 133 hours 21 minutes into the mission of Apollo 7. We're leaving Redstone acquisition and we're anticipating Canary Islands at 135:17, correction, Canaries 133:45. During this pass, Eisele indicated he had taken 30 clicks of water which is 15 ounces and 2 aspirin and at 133 hours 21 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 13345100 (CDT 11:48) 421/1

PAO                      This is Apollo Control, 133 hours,  
45 minutes into the mission of Apollo 7. We have indicated  
that - at 13345 we would have acquisition at Canary Islands  
but it appears the ground tract is too far south for such  
acquisition. Therefore, we have another long dry spell.  
The next acquisition point will be the Redstone Tracking  
Ship at 13447. At 13346, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1344700 (CDT 12:49a) 422/1

PAO This is Apollo Control 134 hours 47 minutes into the mission of Apollo 7. We are approaching the Redstone tracking ship once again, we should have acquisition in a very few seconds. Let's stand by.

CAP COM Apollo 7, Houston.

SC Hello dere.

CAP COM Rog, this is Captain Moho from deep in the trenches of the MOCR. I've got a block data update for you Donn.

SC Okay, sure (laughing)

CAP COM I'm a big TV fan of yours now, Donn.

SC Say again.

CAP COM I say I'm a big TV fan of yours. I even had my wife wake me up this morning to watch it.

SC Oh, is that right? Well, go ahead with your update, trench man.

CAP COM Rog. 087 dash 2 alpha +266 -0270 136 29 19 3483, 088 dash 1 bravo +230 -0600 137 54 53 3591, 089 dash 1 alpha +292 -0622 139 30 06 3430, 090 1 bravo +314 -0620 141 06 07 3386, 091 dash 1 alpha +291 -0622 142 42 26 3541, 092 dash 1 alpha +224 -0630 144 16 25 3073. Standing by for readback.

SC Okay 087 dash 2 alpha +266 -0270 136 29 19 3483, 088 dash 1 bravo +200 - is that 20 or 230.

CAP COM +230

SC Roger, can't read my own writing. +230 -0600 137 54 53 3591, 089 dash 1 alpha +292 - 0622 139 30 06 3430, 090 dash 1-bravo +314 -0620 141 06 07 3386, 091 dash 1 alpha +291 -0622 142 42 26 3541, 092 dash 1 alpha +224 - 0630 144 16 25 3073.

CAP COM Readback is correct.

SC Okay, could you give me a nav update and also a star chart update?

CAP COM Rog, stand by. Apollo 7, Houston I have the map and star chart updates.

SC Roger, go ahead.

CAP COM Rev. 85 NODAL crossing 133 + 39 + 58. 33.0 West, for the map right ascension is 414.

SC Roger, understand. Say again the speed rate ascension.

CAP COM 4:14.

SC Roger, I got 'cha, thank you.

CAP COM Okay. (pause) Apollo 7, Houston, opposite omni please.

SC Roger.

CAP COM Apollo 7, Houston, one minute LOS Redstone, Canaries at 17.

SC Okay.

APOLLO 7 COMMENTARY, 10/17/68, GET: 1344700 (CDT 12:49a) 422/2

PAO . This is Apollo Control 134 hours 55 minutes into the mission of Apollo 7. We've just lost acquisition at Redstone tracking ship. We're anticipating Canary Islands at 135 hours and 17 minutes. This is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 135 hours, 17 minutes into the mission of Apollo 7. We're beginning our eighty sixth revolution. We're coming upon Canary Island acquisition in a very few seconds. Let's listen in.

CAPCOM Apollo 7, Houston, through Canary.

SC Roger.

CAPCOM Say, Donn, I have rather extensive information regarding this landmark tracking. I'd like to start pass it up. It's a lot of verbage - but I don't know how else to do it.

SC Okay, standby. Go ahead, Bill.

CAPCOM Right. I guess when I get through here all the talk is going to result in about - only two changes in the procedures. I would like to go through it so you get an idea of the thinking that has been going here.

SC Okay, go ahead.

CAPCOM All right. First point, tomorrow we will perform landmark tracking on the three REVS scheduled in the flight plan. That is on 90 - 91 and 92. And second point, on yesterday's or today's - it depends on how you look at it, landmark tracking the following problem resulted in auto optics not acquiring on all three landmarks. Or to say another way, this is the reason auto optics didn't work. The trunnion will not drive until the computed trunnion is less than 38 degrees. The shaft is driving at this time which gives the impression that it is acquiring. And apparently you started out with zero optics and with zero optics when the less than 38 degree trunnion occurs, the optics have then approximately 38 degrees to drive in trunnion to acquire the landmark. Now this 38 degrees plus a possible overshoot results in a thing hunting and the auto optics not acquiring.

SC Okay, Bill. I know all that. What happened yesterday is that it never came out of zeros as I could tell. Maximum target got to the 38 degrees and did not appear to drive. And also on one of the landmarks, it was beyond the 38 degree limit the whole time. It was just laying off to one side.

CAPCOM Roger. Okay, I was afraid of that.

SC You see I don't know how it is supposed to work. It didn't because the - one landmark had an effect on two of them. It was beyond the field of view.

CAPCOM On two of them it was beyond the field of view.

SC I know what happened. It never moved off center even when it got from within 38 degrees. Right now it is supposed to drive up and pick it up when you get within 38 degrees of it.

CAPCOM Okay, I got the picture. Two of the

CAPCOM landmarks given to you - were acts beyond the limits. And one of them even after you got it within the 38 degrees, it never went off the stops in trunnion.

SC Well, that's what it appeared to me, yeah.

CACCOM Okay, thank you. Sorry I didn't mean to belabor that point.

SC No, that's okay, I understand what you mean. My point about it not working - it doesn't do you any good. I guess that is the point.

CAPCOM Okay, if it doesn't work, this procedure I was getting ready to go through is not going to be any good either. But - let me standby and take another look at this before I occupy your time.

SC That is okay, go ahead and read it up first.

CAPCOM Okay, they - the next point was the first landmark may have been too far out of plan. Apparently that's correct in what you said. On the second landmark you may not have waited until the less than the 38 degree constraint was met before - starting. Apparently, this is the time it would have come off zero.

SC Now wait a minute. That's not true. I waited until Walt said he saw the thing out the window and then I went for it manually and by that time it was almost up to the center of the radio antenna. Or well within the 38 degrees and I did attempt to get on the track but I thought it was so close to center by then - the optics couldn't keep up on it.

CAPCOM Okay.

SC It never did drive out there automatically to pick it up.

CAPCOM Roger, that's the point -

SC Zero with a shaft rolled around.

CAPCOM Okay, well that's the point you are just making, okay. On the - on the third landmark, you keyed in a plus sign on the latitude. What that means is that maybe there was a wrong algebraic sign.

SC Okay, that was my que. That was also beyond the field of duty and also had to go over and work manually and it was still -

CAPCOM Okay, that was another one that was beyond -

SC Also, the thing outside the window on that one also.

CAPCOM Okay, thank you.

SC What was accomplished - apparently when these guys stay in the south - the relay south which means they got rolls pitching 15, 20 degrees for you to see it

APOLLO 7 COMMENTARY, 10/16/68, GET: 1351700 (CDT 1:20) 423/3

SC which is little bit far because that  
put it way out in a strange weak angle.

CAPCOM That - okay, one more item. The follow-  
ing changes to procedures should result in successful auto  
optics. A, is - I am sure you already doing this Donn. I  
am going to go through it anyway. To provide earlier acqui-  
sition time revise step 5 in the procedure which I doubt  
you are even using to get to get the spacecraft equal to  
10 degrees versus 23 degrees. And I think you said down  
at the Cape you were using 10 degrees.

SC That's what we have been using all along,  
yeah.

CAPCOM I didn't check in the checklist and that  
is my goof. Okay, and also I guess the point that is a  
little bit different here - I hadn't - I didn't know about  
it. When you call up - before you call up P22, mainly, -  
let me get this. Call P22, execute procedure through on-  
board checklist except mainly position shafts zero trunnion  
35 degrees prior to enter.

SC Standby.

CAPCOM Apollo 7, Houston. We are coming upon  
LOS. We'll pick you up at - S-Band volume up at Honeysuckle.

SC Okay.

PAO This is Apollo Control, 135 hours,  
25 minutes into the mission of Apollo 7. We have just lost  
acquisition at Canary Islands. Our next acquisition point  
will again be the Redstone Tracking Ship at 13621. We're  
now in our eighty sixth revolution. You heard astronaut  
Eisele talk to CAPCOM Pogue here in the control center  
at some length concerning the auto optics. And the reason  
yesterday they did not function on the landmark tracking  
problems as they should have. Seemingly, centering around  
trunnion problems and landmarks being beyond the limits of  
auto optics system. At 135 hours, 25 minutes this is  
Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1362100 (CDT 2:24a) 424/1

PAO This is Apollo Control 136 hours 21 minutes into the mission. We now have voice acquisition at Redstone tracking ship. Let's listen in.

CAP COM Apollo 7, Houston through Redstone.

SC Roger, Houston, Apollo 7.

CAP COM We'll try to carry on with this, ah - finish up the little blurb I have here on landmark tracking.

SC Okay, go ahead.

CAP COM Okay. This involves a suggested change in the procedure. At step 6 in the check list which is the Perform Auto Optics Position code, code 11, and it is a suggested change prior to the inter following that code 11. The idea is that after this Step 6, before you hit the inner button, manually position shaft zero trunion 35 degrees, trunion 35 degrees.

SC Okay. They need to put a CNC.

CAP COM Yes, affirmative. That's correct and then optic mode to CNC and then enter.

SC Okay, I think I see what you're driving at.

CAP COM Right.

SC Do it that way.

CAP COM Rog, it sets the trunion to a better initial value to minimize the auto optics acquisition time.

SC Okay.

CAP COM Let's see. Couple more items here. If unable to acquire target, then track unknown landmarks such as coast lines, et cetera.

SC Ah, roger, that's a good deal.

CAP COM After landmark tracking, we want to perform a sextant star observation with approximately 35 degree line of sight to the Sun. The scanning telescope test data correlates well with what was predicted and we are satisfied with that data. After this test, the Star Count Test, will be closed.

SC Roger. Say again, you want to do what now?

CAP COM After landmark tracking, we want to perform a sextant star observation with approximately 35 degree line of sight to the Sun.

SC Oh, I see what you mean. Okay.

CAP COM We will update that in the flight plan and by the way that flight plan update I'll start over Antigua.

SC Rog.

CAP COM One final item. We are considering star lunar horizon sightings for later in the flight.

SC Roger. You better make it pretty soon. That Sun is going lower each day. It's receding toward the

APOLLO 7 COMMENTARY, 10/17/68, GET: 1362100 (CDT 2:24a) 424/2

SC East and there isn't much left now.  
Much space between it and the Sun I mean.  
CAP COM Rog. Okay.  
SC I was thinking perhaps, Bill are you  
still there?  
CAP COM Rog, Go.  
SC After the last landmark pass, on that  
night pass, following that if we perhaps could do the sextant  
check then, sextant er I mean the lunar landmark check.  
CAP COM We'll take a look at that. Sounds like  
a good idea.  
SC Bill, I've been watching it come up and  
it's in a good position. I can use any one of about three  
stars plus I think I can either get a landmark or the lunar  
or the limb of the Moon either one, but it's receding toward  
the East and if we wait another day or two, I'm afraid we're  
not going to have any nighttime left with the Moon up.  
CAP COM Well, that's a good point there. Those  
three stars you mentioned there, are those Apollo stars?  
SC Yeah, there's Alpheratz and Procyon and  
ah, there's one other one I'll have to look - oh, Regulus  
except it's a little too close.  
CAP COM Okay, thank you.  
SC ... Denebola.  
CAP COM Donn, would you turn the O2 tank two  
fans on for about three minutes.  
SC Sure will. (pause) Houston, Apollo 7.  
CAP COM Go.  
SC Roger, I've got a comment relative to  
that star count. I hope the daylight star people are not  
reading too much into these results we're getting. The fact  
is unless you can see 40 or 50 stars out there, you can't  
see enough to really say what part of the sky you're looking  
at.  
CAP COM Okay, I've got it written down.  
SC (cutting out) hard to identify even  
though you can see goodly numbers sometimes, you don't know  
what they are.  
CAP COM Right. (pause) Apollo 7, Houston,  
one minute LOS Redstone. You can turn those fans back off  
and we'll have Antigua at 39.  
SC Roger.  
PAO This is Apollo Control 136 hours 29 min-  
utes into the mission of Apollo 7. We are completing our  
86th revolution going into our 87th revolution very shortly.  
Anticipating contact with Antigua at 36 hours 39 minutes into  
the mission. That pass you heard Astronaut Pogue in the Con-  
trol Center and Astronaut Eisele in the spacecraft have a

APOLLO 7 COMMENTARY, 10/17/68, GET: 1362100 (CDT 2:24a) 424/3

PAO conversation concerning landmark track-  
int, sextant star observation, they're considering star lunar  
horizon sightings later on in the flight, had some conversa-  
tion concerning that. Eisele also indicated that the stars  
are hard to identify. At 136 hours 30 minutes into the  
mission of Apollo 7, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 136 hours, 39 minutes into the mission of Apollo 7. We're coming upon acquisition with Antigua Tracking Station, beginning our eighty seventh revolution. Let's listen at it.

CAPCOM Apollo 7, Houston. Apollo 7, Houston through Antigua. I have a flight plan update when you get ready to copy.

SC Standby a minute.

CAPCOM Okay, standing by.

SC Go ahead, Bill.

CAPCOM Roger. We'll be starting on page 2-48 at about 140 hours. And over there in the box where it says Go no go 106-1, the next item is state vector and - let's see we'll be passing that up at 14243.

SC That's your time tag?

CAPCOM That's your time tag, excuse me. That's correct.

SC Okay.

CAPCOM And delete the reference to the W matrix. And for the landmarks, we have a T align of 141 plus 14.

SC Roger, understand. T aline 141 plus 14.

CAPCOM Affirmative. And at that time you'll also get landmark ID updates.

SC Okay.

CAPCOM On next page at 140 hours, add set up TV.

SC Say again time.

CAPCOM 140 hours.

SC Roger, set up TV.

CAPCOM At 141 plus 12, add TV on. This is 2 minutes before Texas acquisition.

SC Roger. TV on at 141 plus 2.

CAPCOM Affirmative. At 141 plus 30 add fuel cell O2 purge.

SC Okay, fuel cell purge at 30 for oxygen.

CAPCOM Affirmative. At 142 plus 35, replace the - 3 by 3. On the P22 orb nav there is a parenthetical insertion there 9 by 9, make that 3 by 3.

SC All right, I don't understand. You don't do that onboard, do you?

CAPCOM Negative.

SC I understood that that meant -

CAPCOM Okay, okay, forget it, sorry. Okay, now at 143 plus 40 add state vector update P52 permitting. What that means is they'll give you a state vector update and if it doesn't interfere with the P52.

SC Okay. What time is that - 14330?

CAPCOM 143 plus 40.

SC Okay, very good.

CAPCOM And we need opposite anomaly. You still reading me, Apollo 7.

SC Roger, go ahead.

CAPCOM Okay, I thought maybe we had lost you there. At 145 plus 20, state vector update P52 permitting and again that means if it doesn't interfere with P52.

SC Okay.

CAPCOM At 146 hours, replace that box over there, scanning telescope star count and make that sextant star count.

SC Okay.

CAPCOM Now at 146 plus 40, we put a P23 in there for mid course and that's the one you were just talking about I think. We just added that.

SC Can you say that one again?

CAPCOM At 146 plus 35 or 40, somewhere right along in there.

SC What are you going there.

CAPCOM P23 mid course.

SC Oh, okay.

CAPCOM We just stuck that in there in response to your remarks.

SC Okay.

CAPCOM We're coming upon LOS. I'll pick you up in Canary.

PAO This is Apollo Control, 136 hours, 47 minutes into the mission. We had a series of flight plan updates in that pass as we heard. In 140 hours, they'll set up a TV; 141 hours, 12 minutes the TV will be turned on which be 2 minutes before Texas acquisition tomorrow or rather this morning. We have several minutes to wait before the pass at Canary Islands, 2 minutes to be exact. So we'll standby for conversation at Canary Islands.

CAPCOM Apollo 7, Houston, through Canary. How do you read?

SC Loud and clear.

CAPCOM Very good. I'll continue on with this thing. At 147 hours, in your flight plan, there is a telescope star count and - with the sun line of sight and so forth. Just make that coentry there a sextant star count and that's it.

SC Okay.

CAPCOM Okay, at 148 hours on the - page 2-51, 148 hours G & N and also SCS power down.

SC Roger.

CAPCOM Delete the entry down at 149 plus 30 hours where it says that G & N power down and SCS power down just scratch through that.

SC Roger.

APOLLO 7 COMMENTARY, 10/17/68, GET: 1363400 (CDT 2:42) 425/3

CAPCOM And right above at 149 plus 10, delete  
P23 star horizon sightings.

SC Roger. Delete star horizon sightings.

CAPCOM Move over to the next column at 150 plus  
05 H2 heaters on and at -

SC Okay.

CAPCOM And at 150 plus 25 fuel cell H2 purge.

SC Got it.

CAPCOM Okay, that's the end of the update. Have  
a relative listing of priorities which are probably well  
familiar to you. I'll pass them on up anyway. In order of  
priority most important first, the P22, a minimum of 2 suc-  
cessful REVS and three landmarks each REV. The P52's, two  
of them during the night pass between the P22's and then  
third and lowest priority of the sextant star count.

SC Roger, got it.

CAPCOM Okay, that is the end of the update.

SC Okay.

PAO This is Apollo Control, 136 hours,  
58 minutes into the mission. We have lost of signal at  
Canaries. We will pick up Canarvon at 13727. One interest-  
ing thing that has been indicated to Flight Director, Griffin  
on this shift is that the S4-B stage, Saturn Booster, should  
reenter at 166 hours ground elapsed time. That's the seventh  
day into the mission. At 136 hours, 59 minutes, this is  
Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1372700 (CDT 3:30a) 426/1

PAO This is Apollo Control 137 hours 27 minutes into the mission of Apollo 7. We're coming up on Carnarvon at this time, we should have acquisition shortly, let's listen in.

CAP COM Houston, through Carnarvon.

SC Roger, Houston.

CAP COM Apollo 7, Houston, LOS Carnarvon in about one minute. You can turn your S-band volume up in about three minutes for Honeysuckle.

SC Roger, Bill.

PAO This is Apollo Control 137 hours 33 minutes into the mission of Apollo 7. We're standing by through the Honeysuckle pass for some - another some seven minutes. It does not appear that there will be any more voice conversation but we'll stand by anyway.

CAP COM Apollo 7, Houston through Honeysuckle.

SC Roger, Houston, Apollo 7. Houston, Apollo 7, go.

CAP COM Rog, I was just announcing acquisition Honeysuckle.

SC Roger, come in fine this time.

CAP COM Good, I'm reading you five by two.

SC I just took some neat pictures over Australia. At least I hope they turn out neat.

CAP COM Good. Do you have a frame number or anything.

SC Yes, stand by, I'll get it squared away and ... for you.

CAP COM Okay. How are you feeling today?

SC Oh, pretty good.

CAP COM Did you sleep pretty solid last night?

SC Yeah, sure did. (pause) Okay, ... frames 116 through 123.

CAP COM 116 through 123.

SC Roger, the time was 137 hours 30 minutes through about 34 minutes.

CAP COM Roger, 137 + 30 through 137 + 40.

SC Negative, 34.

CAP COM 34, I understand.

SC About a 4 minute period there.

CAP COM Roger, understand 4 minute period. How's the camera working?

SC It's holding up real well.

CAP COM Thought I heard Walt say something there about it not working right or you were having some trouble with it.

SC Well, we were earlier in the flight. Seemed to be gummed up.

APOLLO 7 COMMENTARY, 10/17/68, GET: 1372700 (CDT 3:30a) 426/2

CAP COM Good.  
SC But Wally took some - there was some old grease in there real gummy stuff, took that out of there, we put a little light oil that we had in our medical kit, that nose cream.

CAP COM Rog.  
SC It's been working pretty well ever since. (pause) Bill, log me another 20 clicks of water please?

CAP COM Roger, 20 clicks. Also, Donn, have a question regarding the ah - when you make a water dump, how you know you reported that it effected the optics for a period of time and a question, how long does it affect your ability to see through the optics when you make a dump?

SC Rog, well what happens is anytime you dump fluids ... permits it they turn to ice crystals, the sun reflects off of them and its millions of 'em out there. ... during a water dump or urine dump why it will persist for oh three or four minutes anyway like somebody's ...

CAP COM Rog.  
SC ... know once in a while when your driving the optics ... to see little flakes of something come out on account of that I don't know what the source of that reflection is.

-CAP COM Okay, but from the time you first see this stuff, these crystals, it takes three or four minutes for them to disperse enough so that the optics are usable again. Is that a correct assumption?

SC At least that long, it may be longer than that. What usually happens you're either in complete darkness or complete daylight within that three or four minute period so I really couldn't say if you were in deep space how long it would take for those to disburse.

CAP COM Okay.  
SC ... say on the translunar operation you would not want ah to be dumping water anytime here before your optics operations.

CAP COM Okay, I've got that copied down. Also, while I'm bugging you I've got a question here from the medic he wants to know if you coughed about two minutes ago.

SC (laughing) Matter of fact I did. I was drinking a drink of water and there was some gas came out of the water gun.

CAP COM Okay, and did you turn your head?

SC (laughing) No I did not.

PAO This is Apollo Control 137 hours 42 minutes into the mission. We're anticipating Redstone tracking ship at 137 hours 56 minutes. At 137:43 this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1375600 (CDT 3:59) 427/1

PAO This is Apollo Control. We're coming  
upon Redstone with Apollo 7. Let's listen in.

CAPCOM Roger, Houston. Apollo 7, Houston,  
1 minute LOS Redstone, MILA 12.

SC Roger, 12 for MILA.

PAO This is Apollo Control, 138 hours,  
and 2 minutes into the mission of Apollo 7. We're now  
losing acquisition at Redstone Tracking Ship. The next  
contact will be the MILA facility at Cape Kennedy, Florida,  
138 hours, and 12 minutes, 10 minutes from this time. At  
13802, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1381200 (CDT 4:15) 428/1

PAO This is Apollo Control 138 hours 12 minutes into the mission of Apollo 7. We're coming up on acquisition of Mila and Florida. Just acquired, let's listen in.

CAP COM Apollo 7, Houston through Mila.

SC Roger, Houston, Apollo 7.

CAP COM Rog, Apollo 7, request BAT C voltage please.

SC (garbled)

CAP COM Would you say again, Donn.

SC 36.0

CAP COM Rog, 36.0.

SC Okay.

CAP COM Apollo 7, Houston, one minute LOS Antigua, Canaries at 25.

SC Roger, understand Canaries at 25.

PAO This is Apollo Control 138 hours 21 minutes into the mission. We're anticipating contact with the Canary Island station at 138:25. This is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/16/68, GET: 1382500 (CDT 4:28) 429/1

PAO This is Apollo Control, 138 hours, 25 minutes into the mission of Apollo 7. Judging from our last couple of passes, we do not anticipate any startling conversation on the Canary Islands Pass, but let's join the conversation.

CAPCOM Apollo 7, Houston, through Canary.

SC Roger, Houston, Apollo 7.

CAPCOM Apollo 7, Houston, 1 minute LOS Canary.

We have about 1 more minute that we can use on the - through Madrid. I want to give you a call in about a minute and a half just to see if it is working.

SC Okay, go ahead.

CAPCOM And you won't need your S-Band volume up.

SC Roger, understand that.

CAPCOM Apollo 7, Houston, transmitting through Madrid. How do you read?

GODDARD VOICE Madrid air to ground.

CAPCOM Apollo 7, Houston. How do you read?

PAO This is Apollo Control, 138 hours, 33 minutes into the mission of Apollo 7. At last communications try with Madrid, did not produce an answer that we heard. We're anticipating Carnarvon at 138 hours, 59 minutes. At 13834, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1385900 (CDT 5:02a) 430/1

PAO This is Apollo Control 138 hours 59 minutes. In the 88th revolution of the Apollo 7 flight we're now approaching Carnarvon and in a few seconds should have acquisition. Let's stand by.

CAP COM Apollo 7, Houston through Carnarvon.

SC Roger, Houston, Apollo 7, Go.

CAP COM Roger, acquisition Carnarvon.

SC Bill, I think I'm going to power up a little early and try to get P-51 done on this night pass.

CAP COM Okay. You're going ahead - you'll do it in about 10 minutes?

SC Rog.

CAP COM Okay.

SC Calls for it at 30 minutes after the hour. Think I'll go ahead and do it now.

CAP COM Okay. I'm changing my flight plan accordingly.

SC Rog.

PAO This is Apollo Control 139 hours 5 minutes into the mission. We just heard Astronaut Eisele indicate to Cap Com Pogue here in the Control Center that he was powering up a little early to get the P-51 Program in a night pass and he was doing it at that time at 139:59. The P-51 Program is inertial measuring unit orientation and he is now in the middle of that program and we probably will have little voice contact but we'll stand by through this pass.

CAP COM Apollo 7, Houston. Coming up on LOS Carnarvon, S-band volume up for Honeysuckle.

SC Roger.

CAP COM Apollo 7, Houston, Go.

SC Alright Houston, Apollo 7, Go.

CAP COM I'm sorry Donn I thought you called me.

SC No. I'll give you a S-band here.

CAP COM Yeah. (pause) Apollo 7, Houston, one minute LOS Honeysuckle, Texas at 41.

SC Roger.

CAP COM Apollo 7, Houston. We'll have a nav vector for you at Texas.

SC Roger.

PAO This is Apollo Control 139 hours 16 minutes into the mission of Apollo 7. We've lost acquisition at Honeysuckle, we are coming up the pike to Texas. We're anticipating Texas acquisition at 139:44. At 139:16, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1394100 (CDT5:44a) 431/1

PAO This is Apollo Control 139 hours 41 minutes into the mission of Apollo 7. We're coming up now on the acquisition point for Texas. We should acquire in a very few seconds, let's join in.

CAP COM Apollo 7, Houston through Texas.

SC Roger, Houston, Apollo 7.

CAP COM Alright, Donn, I've got quite a bit of coolie work for you to do here, have a landmark update, a P-27 manual pad and a nav vector to pass up when you're ready.

SC Houston, stand by.

CAP COM Rog.

SC Go ahead.

CAP COM Apollo 7, Houston, let me know when you're ready to copy.

SC Okay, I'm ready which one you want first.

CAP COM Do you want to take the landmark first?

SC Okay, just a minute.

CAP COM Well, if you have the other one I'll go with it, I just didn't know which one you got.

SC Okay, I'll take the landmark.

CAP COM Right. The T-align you already have 141 + 14. Okay I'll give you the three landmark first ID is 8/South, GET is 142 + 47, shaft 140, trunnion 300. Second, ID is 37/North, GET of landmark 142 + 54, shaft 490, trunnion 3 - I'll have to give you the trunnion on the second landmark in just a minute, I'm going on to the third, landmark ID is 209/South, GET 143 + 09, shaft 100, trunnion 310.

SC Rog, I don't understand the shaft angle is that in tenths of degrees or what?

CAP COM It must be, let me check.

SC Okay.

CAP COM Donn, could we have accept please and we'll go ahead and send up that nav vector.

SC Rog, got it.

CAP COM Rog, Donn, you don't need that shaft and trunnion angles, I shouldn't have sent those up.

SC That's okay, I like to have them.

CAP COM But, you're right its one decimal place. And the trunnion on the second landmark was 36.0.

SC Roger.

CAP COM Okay, I have a P-27 update when you are ready to copy.

SC Roger, go ahead.

CAP COM Rog. This will be for CSM nav vector.

Verb 71, 142 + 43 + 00, index 21, 01605 00001 76332 41236  
14021 22711 04330 14421 51621 42274 71220 62676 11564 11455

APOLLO 7 COMMENTARY, 10/17/68, GET: 1394100 (CDT 5:44a) 431/2

CAP COM 06077 33520. I have a nav check.  
Nav check 142 13 0000 -3070 +11887 1438. Standing by for  
readback.

SC Roger. CSM Verb 71 142 43 00, index 21  
01605 4 balls one 76332 41236 14021 22711 04330 14421 51621  
42274 71220 62676 11564 11455 06077 33520. Nav check 142  
13 00 00 -3070 +11877 1438.

CAP COM Readback is correct. And the computer  
is yours.

SC This nav check goes with this state  
vector right?

CAP COM Right. That's in case you need to  
fall back on it.

SC (garble) (pause) Ah, Bill.

CAP COM Yes.  
SC I don't understand this shaft angle  
up in second star. If the target's to the North how can I  
have a shaft angle 49 degrees.

CAP COM Stand by, I'll check on it. Apollo 7,  
Houston.

SC Roger.  
CAP COM Hey, Donn, you are right. That should  
be 311, 311 degrees. In other words, that was a minus 49  
there.

SC Oh, I get it. Bill, I gather  
then these shaft and Sun angles mean that with the ...  
angle that's where the target will be ...

CAP COM That is my impression and I'll get  
that straightened out, too.

SC Rog.  
CAP COM Yes, I've been told that's correct.

SC Okay, fine.  
CAP COM Apollo 7, Houston --  
SC Got a little range on that second one.  
... pulling in a little closer.

CAP COM I'm sorry Donn, I cut you out. Say  
again please.

SC Roger, disregard.  
CAP COM Right, Apollo 7, Houston you have GO  
for 106 dash one.

SC Roger. Stand GO for 106 dash one.  
CAP COM Rog. Apollo 7, Houston coming up on  
LOS, Canary at 59.

SC Roger, understand.  
PAO This is Apollo Control 139 hours 55 min-  
utes into the mission of Apollo 7. We will be acquiring at  
Canary Islands at 139:59, about four minutes from this time.  
Ah, during this last pass, we had passed up to the crew

APOLLO 7 COMMENTARY, 10/17/68, GET: 1394100 (CDT 5:44a) 431/3

PAO through CAPCOM Pogue the GO for 106  
dash one. That is GO for 105 orbits at 139:55, this is  
Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1395900 (CDT 6:03) 432/1

PAO This is Apollo Control, 139 hours,  
59 minutes into the mission of Apollo 7. We're coming up  
now in acquisition with Canary Islands Tracking Station.  
Let's listen in.

CAPCOM Apollo 7, Houston, through Canary.

SC Roger.

CAPCOM Apollo 7, Houston. You're still in  
ACCEPT; you can go to block if you wish.

SC Roger, block.

CAPCOM All right, thank you.

SC This is Apollo 7, over.

CAPCOM Apollo 7, Houston, GO.

SC Roger. Could you give me the astral  
dome for the sextant star count later on today? I don't  
understand why we're doing that.

CAPCOM Would you say again, please?

SC In the sextant star count scheduled for  
about 127 hours, I just wondered why we were doing it since  
we have already done the star count.

CAPCOM Okay, standby one. Apollo 7, Houston.  
We'll get back with you on that one.

SC Okay. Sextant in the daytime.

CAPCOM Apollo 7, Houston, opposite omni.  
Apollo 7, Houston. We're still not reading you. Would you  
select another omni for maximum strength, please?

SC Roger, this is channel four.

CAPCOM Right. Apollo 7, Houston, coming up  
LOS Canary, Carnarvon at 33.

SC Roger.

PAO This is Apollo Control, 140 hours,  
6 minutes into the mission of Apollo 7. We have lost our  
signal at Canary Island Tracking Station at this time. Our  
next acquisition point will be Canarvon at 14033, At 14006,  
this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 140 hours, 15 minutes into the mission of Apollo 7. We'll have a wrapup of the activities for the past 8 hours or going on 8 hours. And we will start back at revolution 84, 133 hours, 13 minutes into the mission. It was at a time when astronaut Eisele indicated that he had 30 clicks of water or 13 ounces and two aspirins. He had some contact with the ground. Schirra and Cunningham were in their sleeping bags and sleep mode. Things were very quiet through this night time. They gave at 133 hours, 47 minutes the current cryogenic quantities were given in the form of plus 66 pounds of oxygen. In other words, 66 more pounds of oxygen than had been planned for, plus 1 pound of hydrogen up to that point in the mission. Information came in that the S-IV reentry - that's the S-IVB stage of the Saturn launch vehicle that is in orbit presently - should be 166 hours. That's the seventh day of the mission it should reenter the earth's atmosphere. They have updates on the flight plan. At 135 hours, 17 minutes, astronaut Pogue, the CapCom, indicating that landmark tracking would occur during revolutions 90, 91, and 92. Landmark tracking - of yesterday wasn't so good because the optics didn't out too well. There was a trunnion problem. Eisele indicated at 136 hours, 21 minutes, in looking for stars they were hard to identify even if there was a star field with several stars apparent. The stars themselves individually were hard to identify. At revolution 87, 137 hours, Eisele indicated he just took some neat pictures of Australia. And he also indicated going back a bit that he had slept well. He also said that harkening back to a problem with their camera - the camera was working well. And again told about taking out the gummy grease as he called it and putting nose cream - applying nose cream to parts of the camera. And now it was operating very nicely. He also indicated at that time twenty more clicks of water. That's 10 ounces. And in a conversation with Pogue here in the Control Center, we've talked about water dumps interfering with the optics operations. In that interference - it seemed to be the water dump turns to an icy crisp - or turns to icy crystals after the dump. And for 3 or 4 minutes at least, the optics are sort of unusable. And then they are usable again after the ice crystals clear away. Things were very quiet - up through Carnarvon. At 138 hours, 59 minutes in revolution 88 when Eisele indicated he was powering up a little bit early to get the P51 program which is the inertial measuring unit - going in a night pass. He wanted to get it operational in the night pass and he was doing it at that time. At 139 hours, 41 minutes, there was a landmark update. And had a GO for 106-1 which means 105 revolutions. The flight plan update

APOLLO 7 COMMENTARY, 10/17/68, GET: 14015 (CDT 6:18) 433/2

PAO for today - indicates that for the most part we have orbital navigation, landmark trackings, sextant star counts, and we have synoptic weather photography S006 photography, a synoptic weather of the south Atlantic and of North Africa and we have terrain photography, synoptic terrain photography, S005 experiments, taking pictures of Lake Chad area in North Africa and the southwest coast of Africa. The command module computer will be powered up but the spacecraft positioning will be controlled by the astronaut's use of the manual attitude hand controller, for such attitudes that they should have. That update goes through 152 hours of the mission. We are now at 140 hours, 21 minutes. The television schedule for today, Thursday, is 7:15 am. They will unstow, or have unstowed, and set up the TV at 140 hours into the mission, or 22 minutes ago, and they are scheduled to power up the camera at 141 hours, 12 minutes into the mission. That will be about 2 minutes before Texas acquisition. We have on the sighting table for this morning on the 17th of October, for the S4B stage, it will approach from the southwest at 7:10 am, Central Daylight Time, maximum elevation 27 degrees due south at 7:14 am, Central Daylight Time, and it will leave us here in Texas going due east at 7:17 am, and it should be visible. The command and service module approached from the southwest at 7:16 am maximum elevation 30 degrees due south at 7:20 am and will leave due east 7:23 am. At 140 hours, 23 minutes into the mission, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1403300 (CDT 6:37a) 434/1

PAO This is Apollo Control at 140 hours 34 minutes into the mission. At the present time the spacecraft is coming up on the Carnarvon, Australian tracking center and we anticipate that the crew would be having breakfast at this time. Wally Schirra and Walt Cunningham having completed their sleep cycles and we'll stand by here as CAPCOM Jack Swigert prepares to put in a call to the crew over Carnarvon. At the present time here in the Control Center, we are undergoing a change of shifts with flight director Glynn Lunney's team coming on to replace that of flight director Gerry Griffin and our CAPCOM at the present time is Astronaut Jack Swigert who has just put in a call to the crew. We'll pick up that conversation now over Carnarvon.

SC Okay, go ahead. What do you want?

CAP COM Okay, first we'd like to put the DC indicator switch to either Main A or Main B.

SC Okay, it's on Main A.

CAP COM Okay and then on panel five, we'd like to open the following circuit breaker, the BAT relay buss at A circuit breaker.

SC Stand by. Roger Pan relay buss BAT A going open now.

CAP COM Okay, and we're going to leave it open here to get some time data. We'll close it just before LOS Honeysuckle.

SC Okay.

CAP COM What we'll do is we'll repeat the following procedure for Battery B over the states.

SC Okay.

CAP COM And, Donn, on the question you had on the sextant star count, what we had done before was the scanning telescope star count. This is a little different, we get a 37 degree LOS with the Sun.

SC Rog, I understand. I thought the sextant count was to be used in case the telescope count didn't pan out and since we did get, we did succeed in getting star counts on two lines of sight there I don't understand why we have to do it again. I've already verified that you can see stars in the sextant in the daytime.

CAP COM Okay, stand by. Donn, it's the line of sight that they feel that's important. We haven't done anything quite that close to the Sun before.

SC Rog, we'll discuss it and call you back later. That's eating into my sleep time for one thing so I guess Walt can do it then.

CAP COM Okay. This is the last test we're going to do on that, Donn.

APOLLO 7 COMMENTARY, 10/17/68, GET: 1403300 (CDT 6:37a) 434/2

SC Yes, okay.  
CAP COM Donn, could you place your O2 tank  
2 fans ON for three minutes and then OFF.  
SC Roger, 2 going ON. (pause) Houston  
Apollo 7, over.  
CAP COM Good morning, Walt.  
SC Roger. Morning reports seem to  
indicate that we're not ... in this cabin. Partial pressure  
O2 is still 245 millimeters.  
CAP COM roger, copied that. Apollo 7,  
Houston, we got about one minute LOS Carnarvon. You want  
to turn up your S-band volume for Honeysuckle.  
SC Roger.  
PAO This is Mission Control. We'll have  
a brief dropout of signal now as the spacecraft passes out  
of range of the Carnarvon station. We'll be acquiring again  
in about one minute as we come back in range of the Honey-  
suckle station over in eastern Australia. During that pass  
over Carnarvon, you heard Donn Eisele comment with the flight  
controllers on the ground pertaining to the use of the sex-  
tant for star count and the ground advised that they would  
like to do another sextant star count at a different side  
angle. We also heard reference to recycling of the upper  
two oxygen cryogenic tank fans. This is a procedure that  
apparently is working quite well in preventing momentary  
overvoltages on the AC busses. We also heard their problem.  
Walt Cunningham for the first time since he began his sleep  
cycle, over 8 hours ago, still haven't heard from Commander  
Wally Schirra at this point, and Cunningham advised that  
the partial pressure of oxygen in the cabin is now up to  
245 mm of mercury. That is well above the partial pressure  
or oxygen content that we have here at sea level. So that  
enrichment process of the cabin atmosphere is continuing  
and will continue throughout the mission, probably never  
reaching pure O2 in the cabin. We would expect to have a  
small amount of nitrogen left in the cabin at reentry. We  
will stand by now as the spacecraft moves to within range  
of Honeysuckle and we should be reacquiring again in just  
a few seconds from now.  
CAPCOM Apollo 7, Houston. You can close  
Batt relay buss, batt A circuit breaker now.  
SC Good morning, Jack.  
CAPCOM Good morning, Wally, how are you?  
SC Very good. Did we just go over Penney's  
home stand.  
CAPCOM Kind of looks that way.  
SC Yes, it was up loud and clear, sitting  
there it was very pretty.  
CAPCOM Roger. Did you copy the closure of  
battery buss A?

APOLLO 7 COMMENTARY, 10/17/68, GET: 140330 (CDT 06:37a) 434/3

SC (garble)  
CAPCOM Okay, real fine.  
SC We can see Sydney, Melbourne, Canberra,  
they stood out clear as a bell in the coastal area.  
CAPCOM Roger.  
SC That's dark.  
SC I can even see the Southern Cross at  
this time, so Penny can feel pretty good about the flag up  
in our office.  
CAPCOM Roger.  
SC Jack, do you have a map update handy?  
CAPCOM They are doing one.  
CAPCOM Okay, Walt, here is your map update.  
SC Go ahead.  
CAPCOM Okay. For rev 89, a GET of the node  
is 1410355, longitude 146.7 degrees west. We are pretty  
close to LOS Honeysuckle, pick you up at the Huntsville at -  
PAO Evidently the spacecraft has passed  
out of range of the Honeysuckle station. You heard CAPCOM  
Jack Swigert advise the crew that we will be reacquiring  
over the tracking ship Huntsville in about 18 minutes.  
The spacecraft will continue to pass on up across the Pacific  
and on over the Guaymas, Mexico tracking station. We are  
scheduled to acquire at Texas, the Corpus Christi station,  
at 141 hours 12 minutes ground elapsed time for that tele-  
vision pass over the United States this morning. That will  
be about 7:15 am Houston time. At 140 hours 51 minutes into  
the mission, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1410800 (CDT 7:11A) 435/1

PAO This is Apollo Control at 141 hours 8 minutes into the mission. The Apollo 7 spacecraft at the present time is coming up south of the tracking ship Huntsville in the western Pacific. We should be acquiring there shortly. We've just shown that we do have acquisition and we expect a call to go in to the crew from CAPCOM John Swigert momentarily. Coming up on our stateside pass with the television transmission this morning, and we anticipate we will be acquiring at the Texas station, Corpus Christi, Texas, about 3 or 4 minutes from now. We'll stand by now for the CAPCOM to put in a call to the crew over Huntsville.

PAO We have been advised that the converter from the Texas site, the one that gave us a little trouble yesterday, appears to be working well this morning. We're getting a signal from the station, a test pattern on our screens, we just now put in a call to the crew. We'll pick up conversations from the Huntsville.

PAO We have just gone out of range of the Huntsville, we'll be reacquiring at Guaymas, Mexico shortly. The spacecraft ground track on this pass over the southern part of the North American continent will actually take us down below Baja, California, and out on across the central part of Mexico. We'll cross over about a third of the way down into the Gulf of Mexico and continue on across the Gulf and out over the upper part of the Florida peninsula into the Atlantic. Here is the call now to the crew through Guaymas.

CAPCOM Could I verify that the 02 tank 2 fans are off now?

SC We'll check it.

SC Give us a call, Jack, when you pick up the picture, will you?

CAPCOM Will do, Walt, and what we would like to do is get an open circuit check on battery B now and while we're going across the states now could we put the DC indicator switch at main A or main B and then pull the better relay bus bat B circuit breaker?

SC I pulled the circuit breaker in battery bus B bat relay bus.

CAPCOM Okay, fine Walt. We'll give it about 10 minutes and I'll ask you to close it.

SC Okay.

PAO The crew aboard Apollo 7 at the present time carrying out some last minute functions before we begin this television pass. They should have the TV camera on and warming up at the present time. Now we're just a little over a minute from acquisition at the Texas site and first resumption of those television pictures.

PAO And we are starting to get the first flickering of the picture. It fades in, and we have the picture dropping out again. There we have a good solid picture

PAO and we'll take a look at that.  
CAPCOM We've got the picture now Walt.  
SC Roger and good morning. We are with  
you today while passing over the states to give you our  
daily ritual.

SC Walt, would you please go over and dolly  
up the camera. I wonder what time it is. I'll call up the  
computer clock time and take a look.

CAPCOM Okay, the picture isn't the best right  
at this time, Wally.

SC This is where we stand and you'll note it's  
just about the time (garble) time, I'm not sure which way you look  
at it, we have our situation completely solved. We now know  
what our orientation is. Now if you'll toss the camera now,  
I'll continue the tour of the cockpit for the people.

CAPCOM Apollo 7 Houston, opposite omni.  
PAO We're going to switch antennas here to  
try and improve the picture a little bit.

SC (break in on talk) you'll see out. That  
is a new picture of the camera crew today. They're looking  
from the commander's seat over to the number 01 window. And  
you see the sun just starting to come into the window and it  
gives out a bright glare, and you may notice there is some  
of the collection of deposit on the window as I zoom in this  
morning. This window has given us some trouble in that it  
is near our dump system and it caught some of the debris on  
it. Next to the window is the optical site which we use  
for accurate alinement for the window. We come over to  
the number 02 window with the markings on it. These markings  
are used to orient the spacecraft if we have no other guidance  
system available and it gives us the pitch angle in relation  
to the visible horizon of the earth and it has numbers such  
as 05 10 15 20 25 30 and a line at the top which is our  
retro attitude, the attitude we're in to decelerate the  
spacecraft out of our orbit. Coming over to the center  
window or the hatch window, we have some lines that were  
added to it to give us attitude reference for reentry. The  
lines describe a 55 degree bank to the left, a 55 degree  
bank to the right, and two 90 degree banks either left or  
right.

CAPCOM Apollo 7 Houston, that's a good picture  
of the hatch window. We can clearly see the lines.

CAPCOM Apollo 7 Houston.

CAPCOM Apollo 7 Houston, we're losing your  
voice description.

SC Okay, Walt, why don't you take the  
camera back and you can show the over head section above  
the couches.

CAPCOM Okay, Wally, we've got your voice back now.

SC Roger, How's the picture, Jack?  
CAPCOM The picture is very good, very good.  
SC What I had shown you there were the two windows, the commander's reference window for pitch attitude, and the center hatch window for bank attitude for reentry if we lose other guidance systems.

CAPCOM Roger, we copy the center window.  
SC (break in talking) for the LMP, this is where he sleeps. It's also where the command module pilot sleeps during his sleep cycle. Under the third couch we can see that there is absolutely no space left available. We have a suit stowage bag which is now stuffed completely full with three suits. These suits came off about 6 hours into the flight and we've been very comfortable ever since. Passing back to the commander he will describe the other couch for us.

SC This area here is the area under the command pilot couch and we're showing the stowage of some of our loose equipment, the large long bag is the temporary stowage bag. At the far end is the helmet bags where we have our helmets stowed for the duration of the flight till we put on our suits again and at this point Donn is frisking a sleep station bag. It looks like some little camp area sleeping bag as it comes toward the lens.

SC That is affixed to the overhead structure that you see now -

CAPCOM Apollo 7, opposite omni.

SC (break in talking) is a spring system to secure.

SC When this is properly secured we have the sleeping bags restrained and we in essence are not in contact with any area of the spacecraft except the bag itself. Donn Eisele's had a rather hard day, so we'll let him turn in early and give you an idea of what the sleep station looks like with one of the crew in it.

SC One of the things to get used to up here was sleeping in a position when you are completely free floating.

SC At this particular point you can see some of the sunlight coming in. We find that when we get as tired as we are at the end of the day here we will cover our heads with the sleeping bag material and the sunlight does not affect us. Houston, are you still reading us?

CAPCOM Roger, 5 by, Wally.

SC At the far end of the stowage above the couches here we have the helmet bags stowed for the commander on his side, and the lunar module pilot on his side

APOLLO 7 COMMENTARY, 10/17/68, GET: 1410800 (CDT 7:11A) 435/4

SC in the temporary stowage bag. You are looking here at two of the six umbilical hoses running from the environmental control system to the suits when the suits are on, and to provide circulation when the suits are off. Hose on your right is the cold air hose bringing cold air into the suit and the one with the screen on your left is the return hose from the suit. It is used also to clean the air with that screen when it's off the suit.

PAO And we appear to be having trouble maintaining a good lock on this picture now as we've gone out of range of the Corpus Christi station, and over the station at Mila, the CAPCOM Jack Swigert, has now asked the crew to change antennas and they were back again with pictures.

SC Okay, we have the Hasselblad camera being held by Wally Schirra now, whoops, he let go of it. Did you see that Jack?

CAPCOM Roger, we copied that. A real good demonstration of zero g.

SC And we might add for everybody's benefit coming up later on in these flights that there is to be absolutely no problems with getting around in zero g as long as you're out of those suits. The work done is almost zero, and you can move any place you want to very freely and you certainly don't need strong handholds to take care of it. And you can generally jam your feet - you find you end up using your feet an awful lot more than you do in 01 g, kind of like a monkey moving around in his cage. You just took our picture. How's it going, Jack?

CAPCOM It's going real fine. We're kind of locked up on a midframe here, but we're getting a good recording of this.

SC Okay, here is a pencil demonstration. Notice how Wally can control that pen just with his breath. He can blow on me and probably do the same thing.

CAPCOM Roger, saw that, Wally.

SC Okay, we have this 16mm camera sitting back on the wall there just above my head. This camera too has the wide angle lens and we'll have some color movies of some of our home activities, as we've already labeled the movies, naturally, our home movies.

CAPCOM We're just about to lose it now, Wally.

SC Roger, and we do remember to remove the lens cap. and I just did.

CAPCOM Roger.

SC When we take pictures out the window we always focus at infinity.

CAPCOM Roger, we've lost the picture now.

APOLLO 7 COMMENTARY, 10/17/68, GET: 1410800 (CDT 7:11A) 435/5

PAO                    And we appear to have gone out of range as you heard CAPCOM Jack Swigert advise the crew. We had a very good picture early in that pass from Texas, and also excellent communications from the spacecraft on across the United States. We appear to have some problems with the scan converter at the Mila site, and we would anticipate that we got quite good recordings of that transmission, although the live play back left something to be desired with a little bit of trouble getting the frame rate properly centered. We'll continue now to monitor the crew conversations as they continue out on over the western Atlantic toward the northern part of Africa.

CAPCOM                We didn't see the arrow on the aft bulkhead.

SC                    Well, it blew the whole bit.

CAPCOM                We could see the lines on the hatch window very clearly, but not the lines on the rendezvous window.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1412600 (CDT: 7:29a) 436/1

CAPCOM Lines on the hatch window very clearly  
but not the lines on the rendezvous window.

SC I see; very good.

SC Do you see the debris on my number 1  
window.

CAPCOM No, we couldn't make that out and we lost  
your voice just about the time you were describing the -  
just after you described the description of the hatch window  
lines.

SC I see.

CAPCOM 7, we are 1 minute LOS Bermuda; Canaries  
at 141 plus 33.

SC Roger.

PAO And this is Mission Control; we show that  
we have lost our acquisition with the spacecraft from Bermuda.  
We will be reacquiring in about 3 minutes from now over the  
Canary Islands. This is Apollo Control at 141 hours, 29 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1413500 (CDT 7:38a) 437/1

PAO This is Apollo Control at 141 hours, 35 minutes. The Spacecraft has been acquired now over the Canary Island tracking station. The crew, at the present time, is scheduled to be involved in weather photography over the south Atlantic and on over the northern part of the African continent and we'll listen in now for the conversations between the crew and Mission Control Center.

CAPCOM Apollo 7, Houston through the Canaries. Roger, I have some targets of opportunity that you can add to your synoptic training photography list.

SC (garble)

CAPCOM Standby Wally, we've got a loud tone here.

SC Tell him, he can take the day off.

CAPCOM Apollo 7, Houston, are you reading now?

SC We read you loud and clear.

CAPCOM Okay, we had a loud comm there, which cleared itself up.

CAPCOM Apollo 7, Houston, are you reading now?

SC We read you loud and clear.

CAPCOM Okay, we had a loud comm there, which cleared itself up. There are five targets of opportunity, which you can add to your training photography.

SC Okay, how are you blocking those, by time.

CAPCOM No, we're just giving you the targets, and just letting you use your own judgement, fieldwise and everything, to photograph them when you come over.

SC If you will give me a time hack, I could put them on the flight plans faster.

CAPCOM Okay, standby. Wally, we may not get back to you with the GET of all five targets before Canaries. then we'll pick you up at Tananarive at - .

SC (garble), we'll pick it up later.

CAPCOM Okay, we have Tananarive at 141 plus 52.

SC Okay. Okay. Houston, Apollo 7.

CAPCOM Go ahead 7.

SC Give me the five targets and we can look them up ourselves.

CAPCOM Okay. Okay Wally, number one is the volcano in the Galapagos Islands.

SC Galapagos, okay.

CAPCOM Number two is the Kilauea volcano in Hawaii, and numer three is the Elat volcano in Luzon, in the Philippine Islands.

SC Roger, I got that.

CAPCOM And number four is Mt. Areno in Costa Rica, and that is 9 degrees north, longitude 84 degrees west.

SC Standing by for (garble).

CAPCOM And number five is Fort Bliss area in

APOLLO 7 COMMENTARY, 10/17/68, GET: 1413500 (CDT 7:38a) 437/2

CAPCOM El Paso.  
SC Roger, I think (garble) yesterday.  
CAPCOM Okay, and the number three - the Elat  
volcano in the Philippines, the lat is 14 degrees north,  
longitude 120 degrees east.  
SC 120, Roger. Okay, we're going to do that  
area today and a few landmarks and all of that good stuff, so  
you'll have a chance to (garble).  
CAPCOM Roger. Wally, we've got a sixth one they  
just handed me. / Africa, between 10 degrees north, 25 degrees  
east to 15 degrees north, 25 degrees east.  
SC Okay. (garble) Africa pretty hard,  
because that (garble) - as you can see right now, the daylight.  
CAPCOM Okay, fine. Could we get that Bat Relay  
Buss - Bat B circuit breaker closed now?  
SC Done. Jack, what are the emphasis we  
need (garble) 15 to 20 minutes (garble) to stay near him.  
CAPCOM Roger.  
PAO This is Mission Control, we have had  
LOS from the Spacecraft over the Canary Islands. Spacecraft  
now passing over the northern part of the African Continent  
and we will continue on down across Central Africa and out  
across the Madagascar Republic where we will acquire at the  
Tananarive station. Present - this is Mission Control at  
141 hours, 40 minutes into the flight.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1415400 (CDT 07:57a) 438/1

PAO This is Apollo Control at 141 hours 54 minutes, coming up on Tananarive and we will listen for the conversation with the crew.

CAPCOM Apollo 7, Houston through Tananarive, standing by.

SC Apollo 7.

CAPCOM Apollo 7, Houston. One minute LOS Tananarive, Carnarvon at 142 + 08.

PAO This is Mission Control. Apollo 7 is now out of range of the Tananarive tracking station and we will acquire the spacecraft next as it goes over Carnarvon. During this rev, the Apollo 7 crew will be searching out a number of targets of opportunity for their synoptic weather and terrain photography, including volcanoes in the Hawaiian Islands and the Philippines. At 141 hours 59 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1421000 (CDT 8:14a) 439/1

PAO This is Apollo Control at 142 hours 11 minutes. Our CAPCOM Jack Swigert has just put a call into the crew over Carnarvon and we'll pick up the conversation.

CAPCOM Oh, two thirds of the way, or half the way through, and we've got it on tape and we are trying to replay it - to where it's not locked on a mid frame. We lost voice just about the time Wally started describing the middle hatch there and to where you picked it up right after that. Walt, this land mark number 37; it's 78 miles north of ground track.

SC Okay.

CAPCOM And could we get the biomed switch to

CDR?

SC Done.

CAPCOM Apollo 7, opposite OMNI. Apollo 7, Houston. We are 1 minute LOS Carnarvon. We pick up HSK here; do you want to turn your S band volume up?

SC Okay. Jack, log the LMP temp of the water on the water (garble) would you please?

CAPCOM Roger; will do.

PAO This is Mission Control. That appears to be about all we'll get from the crew over Carnarvon. We'll pick up again in a few minutes as the spacecraft comes into view of the HSK station.

END OF TAPE

PAO This is Apollo Control at 142 hours, 37 minutes into the mission. We've acquired the spacecraft over Hawaii, and are in communication with the crew.

CAPCOM Apollo 7, Houston through Hawaii.

SC Aloha.

CAPCOM Roger, Wally, you're coming through loud and clear.

CAPCOM Go ahead.

SC Log the CMP 20 clicks on the water gun.

CAPCOM Will do. Hey, Donn, on this second landmark. This is going to be a very difficult one to acquire. You'll probably have to roll up to about 30 degrees right to acquire it, and there's some cloud cover up there. We're saying near seven tenths. If you do have any problems getting it go ahead and acquire on an unknown landmark and track that.

SC You say the second one, that's (garble), right?

CAPCOM Yes sir..

CAPCOM It's very likely we won't get it and we (garble) check out of the (garble) landmark.

CAPCOM Okay; understand.

PAO This is Mission Control; we'll have a brief dropout in communications here as the spacecraft crosses between acquisition at Hawaii, and is picked up again by the Tracking Ship Huntsville. We'll stand by.

PAO We have had no conversation from the crew yet over Huntsville; we will have a pretty solid contact with the spacecraft now on across this Stateside pass. At the present time, the spacecraft is in an orbit 153 miles at his high point, with a perigee, or a low point, of just about 90 nautical miles. Now the orbital weight of the vehicle is 29 580 pounds at the present time.

CAPCOM Apollo 7, Houston. Apollo 7, Houston. Apollo 7, Houston.

SC Go ahead.

CAPCOM Roger; we have a small correction to the location of landmark 37, the second landmark.

SC Go ahead.

CAPCOM Okay, that's 78 miles south - south of ground track, which means you are going to have to roll that

SC That's about 150 miles.

CAPCOM Small - which means you are going to have to roll left to hit it. I'm sorry about that.

SC (garble) Thank you. (garble)

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1424700 (CDT 08:50a) 441/1

SC Four marks in so far.  
CAPCOM Apollo 7, Houston.  
SC We've got five marks in that first  
landmark.  
CAPCOM Okay, real fine. We have a - well,  
we changed that 78 miles from north to south. That is  
going to change our shaft that you should be reading. Your  
shaft for the second landmark will be 049 degrees, same  
trunnion.  
SC Roger.  
SC (garble) updates. Are you reading  
these, Jack?  
CAPCOM Affirmative, Donn. We are copying  
them.  
SC Okay, I'll just (garble) on that.  
SC Houston, vector is good at all marks  
or better, or else it's not working.  
CAPCOM Roger, copy that.  
SC Roger.  
SC Boy, you can really tell who is  
burning fires down there today.  
CAPCOM Roger, Walt.  
SC There is one place, there is a smoke  
curl of about 160 miles. It obscures the whole area.  
CAPCOM Copy that.  
SC The pollution ought to get up here  
some time.  
SC At 142 hours 51 minutes 34 seconds,  
Wally took a picture of the scene with the large smoke  
trail off of it.  
CAPCOM Copy.  
SC Starting to roll left.  
SC Here is a target location update.  
SC Hey Walt, that place is under water.  
SC Jack, what is that trunnion angle  
and shaft angle for this target?  
CAPCOM The trunnion is going to be 049 and  
the shaft is going to be 03 - rather the shaft is going to  
be 049, trunnion 030.  
SC Okay. That's with the roll angle in?  
CAPCOM Negative. That is not with the roll  
angle in.  
SC Okay, so we can subtract the roll  
angle a little there, somewhat.  
CAPCOM Affirmative.  
SC Pictures 127 to 130 were taken at  
Houston and the area north of Dallas and Dallas.  
CAPCOM Roger.

APOLLO 7 COMMENTARY, 10/17/68, GET: 1424700 (CDT 08:50a) 441/2

SC But we are socked in right off the  
Gulf coast.  
SC (garble) we might be through in 10  
more minutes (garble).  
CAPCOM Roger.  
SC Jack, whereabouts is Guaymas this  
morning?  
CAPCOM Stand by. I'll get you lat and long.  
Wally it looks like -

END OF TAPE

CAPCOM Wally, it looks like it's just west of Fort Meyers.

SC Right, Walt has it right now. It's to the south of us.

SC Jack, next pass if we don't have a landmark right around this same area, we can get a beautiful picture of that hurricane.

CAPCOM Okay, sounds good.

SC The weather is too bad to see Tyndal.

SC Hey, Jack.

CAPCOM Go ahead.

SC Apollo 7. Houston, Apollo 7.

CAPCOM Go ahead.

SC Roger, Jack. That isn't enough time between landmarks.

CAPCOM Roger (cut off)

SC I have to get my book to the next landmark, and check booth squared away, and load in new data. Plus accept all the results of the first one. You just can't get it all done in 7 minutes.

CAPCOM Okay, I copy that Donn.

SC I didn't get an (unreadable) mark either because it was just too late getting on the scope. Also, I was trying to find out - and we - a good place to practice landmarks is right here. (cut off) JT.

CAPCOM Roger, understand.

CAPCOM You understand, we never did get landmark training with our simulator, it did not work.

CAPCOM Rog, I knew that.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1430000 (CDT 9:02) 443/1

SC Houston, Apollo 7.  
CAPCOM Apollo 7, Houston, GO.  
SC Roger, when I transmit the pulse to  
self command, it is much more difficult than it is in the (garble).  
I have to pull the switch very rapidly to avoid a break  
command pulse.  
CAPCOM Roger, copy that. Wally -  
SC That's the only abnormality I've seen in  
the system, other than the fact that the pulses are much  
smaller than they are in the simulator.  
CAPCOM Okay, copy that. We do have the information  
on the first landmark for that next P-22, during the next Rev.  
If you're ready to copy.  
SC I think we'll use the (garble) with the  
(garble).  
CAPCOM Okay.  
SC Wait a minute, here it comes. Go ahead.  
CAPCOM Okay, this will be landmark 18, it's north  
of ground track, 28 miles north. The GET is 144 plus 23.  
You'll have a shaft of 343 and a trunnion of 31.  
SC The 14423 was the GET landmark, right?  
CAPCOM Affirmative.  
SC How about landmark number and  
give me the GET again.  
CAPCOM Okay, it's landmark 18 28 miles north of  
ground track.  
SC Landmark 18 28 miles north, 144 plus 23,  
shaft rate 343 and trunnion of 31.  
CAPCOM Roger.  
CAPCOM We're trying to find a second one for you  
that gives you enough time in between sightings, and if not,  
we'll give you - let you have an unknown landmark exercise.  
SC Okay.  
CAPCOM And Donn, on the second landmark for this  
next Rev, we can't find a suitable landmark that is clear at  
this time, so it's an unknown landmark exercise, it's your  
day.  
SC Okay, fine. If there are too many clouds,  
I'll just use a cloud bank.  
CAPCOM Real fine.  
PAO This is Mission Control at 143 hours,  
4 minutes. We have completed that stateside pass now, and  
have lost acquisition with the station at Antigua. The next  
station to acquire will be the Tananarive station. The Space-  
craft will pass north of Ascension. We don't anticipate any  
conversation with the crew over Ascension. This is Apollo  
Control at 143 hours, 4 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14327 (CDT: 3:30a) 444/1

PAO . This is Apollo Control at 143 hours, 27 minutes. At the present time the Apollo 7 spacecraft is coming up on the Tananarive Tracking Station. Flight plan calls for the crew to be involved in photographing the southwest coast of Africa at the present time; and we have a call in to the spacecraft.

CAPCOM Don.

SC That's 5 points on it (garble) and it's (garble) landmark (garble). I think it's (garble) for the landmark.

CAPCOM Don, you started out real good and then you faded out; we'll catch you over Carnarvon on that report. We copied that the update to the state vector were all zips.

PAO This is Apollo Control. We are having some difficulty getting good communications with the spacecraft during this pass over Tananarive. We'll stand by and pick up the loop again if any conversations develop.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14343 (CDT 9:46A) 445/1

PAO This is Apollo control at 143 hours 43 minutes. We're standing by now to pick up the spacecraft over the Carnarvon, Australia tracking station. We've just put in a call to the crew.

CAPCOM Roger. I have a couple of questions for Walt, here.

SC I'm listening.

CAPCOM Okay, the gurgling sound that we heard yesterday, Walt, when we were on AUTO 01 then. Did you hear the same gurgling sound in AUTO 02?

SC It came back at several different times. It's also gone away. It seems to be associated with higher community time. AUTO 01 and AUTO 02 are both working on the segment accumulators.

CAPCOM Okay, fine.

SC We have a theory, Jack, that where we provide g on a burn we start disturbing water that may be in the lines and get it started out of the pipes.

CAPCOM Okay, copy that. You are still stroking manually a little bit, too?

SC Yes, we hit it a couple of times. I'm not sure that had anything to do with clearing it up or any thing. It seems to me it kind of runs its course and it's occurred after burns every time.

CAPCOM Okay, and then we had some garbled transmissions. We didn't get too much of the transmission when you reported a leak yesterday at the water panel. Did this occur when you were dumping waste water?

SC Every time we've dumped waste water the place where the PUD attaches to the waste water panel is a what do you call it - a swaged fitting - and there is no O ring in it, and we tightened it up and it leaked. I tightened it up again as much as I think we ought to on that small line with the wrench we have and it still forms a big bubble every time you dump. You get a - oh, 4 or 5 ounces of water in one big bubble right there on the waste water panel after you've finished dumping a waste water tank.

CAPCOM Okay, copied that.

SC Just to make the point clear, Jack, that same fitting is used as a GFE fitting on the spacecraft prep period there at the Cape, and they used a Voishant washer in there, but we can't do it that way. They're going to redesign that fitting for later flights or put a solid mount in.

CAPCOM Okay, real fine, real good description here. And the other thing is I have - we've got another land mark on this next pass that is - allows you to do some unknown land mark tracking in between. We'd like to pass you some data on a second land mark on this next pass.

APOLLO 7 COMMENTARY, 10/17/68, GET: 14343 (CDT 9:46A) 445/2

SC Okay, go ahead.  
SC Jack, on this next pass, we'd like to make a run on that hurricane instead of an unknown. We can get unknowns all around the world.  
CAPCOM Okay, we concur on that, Wally. We'd like for you to send up a state vector here at Carnarvon. Could you go to ACCEPT?  
SC You've got it.  
CAPCOM Okay, coming up. Okay this land mark is number 225. It's 68 miles south of ground track.  
SC Okay, Jack, hold it. Donn's doing a little thing here.  
SC All right start again, Jack. I'm sorry.  
CAPCOM Okay. Land mark 225 68 miles south of ground track, GET 144 plus 56 shaft 037 trunnion 033.  
SC Okay. Land mark 225 68 miles south 14456 the time, 037033 shaft and trunnion.  
CAPCOM Okay, this will be a real marginal land mark since it's quite close to the terminator there.  
SC Okay.  
CAPCOM Okay, and I'm ready with your NAV check pad when you're ready to copy.  
SC All right, stand by. Go.  
CAPCOM Okay GET 143470000 minus 2613 plus 11802 1502.  
SC Roger. 14347 4 balls minus 2613 plus 11802 1502.  
CAPCOM Roger, and we're through with the computer.  
CAPCOM And Wally, would you like an update for the telescope for watching the hurricane or do you intend to do that visually?  
SC Visually.  
CAPCOM Okay, we copy.  
CACOM Okay, Wally, the present position of the hurricane is about 100 miles due west of Tampa.  
SC Roger.  
CAPCOM I'll give you part of the news. The front page headlines this morning on the mission says, "Big Storm tracked by Apollo 7" and describes the spacecraft as a manned weather satellite.  
SC The witch is out, Finley.  
CAPCOM We're about 1 minute LOS Carnarvon, we'll pick you up at Hawaii at 144 plus 07.  
SC One day we're time sat and now we're nav sat.  
CAPCOM Roger.  
SC Our navy boys, they're just worried about being unsat.  
PAO This is Mission Control. We've lost acquisition now at the Carnarvon station, and we'll be

APOLLO 7 COMMENTARY 10/17/68, GET: 14343 (CDT 9:46A) 445/3

PAO reacquiring the spacecraft again at Hawaii. During that pass you heard Wally Schirra describe a small leak that they encountered. As he described it, it was on the water panel during a dump of waste water. He said they get about 4 or 5 ounces of water which apparently comes out as one big bubble when the waste water is dumped. He said they had tightened the fitting in an effort to cut down the leakage, but they were still getting about 4 to 5 ounces in that bubble. This is Apollo Control at 143 hours 52 minutes into the mission.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14407 (CDT 10:10a) 446/1

PAO This is Apollo Control at 144 hours 07 minutes into the mission. At the present time, the spacecraft is coming up on Hawaii and the crew, during this pass, will have an opportunity to view one of those volcanoes that we understand is active on the island of Hawaii, the volcano Kilauea. Later on in this pass, they are scheduled to attempt two more landmark trackings, one of these sites is the city of El Paso and the other in south Africa on the western coast, will be Walvis Bay. During the first two tracking exercises that - actually three were scheduled, the crew successfully carried out two of them. The third site was covered by - obscured by clouds. This landmark tracking, of course, will be of value to a subsequent mission to the moon, where the astronauts would be able to update their orbital information in lunar orbit, from onboard information, and supplemented by ground tracking updates. We now have acquired at Hawaii and we will be putting a call to the crew shortly. We will stand by for that.

CAPCOM Apollo 7, Houston through Hawaii.

SC Go ahead.

CAPCOM Apollo 7, Houston. I have your block 16 data whenever you are ready to copy.

SC Go ahead, Jack.

CAPCOM Okay. 093 dash 4A, able + 310 - 1620 146 + 58 + 143420094 dash 4 able + 305 - 1619, 148 + 34 + 163452095 dash 4 able + 257 - 1630150 + 09 + 203350096 dash 3 able + 313 + 1339151 + 25 + 413430, 097 dash 3 able + 299 + 1339, 153 + 01 + 353455, 098 dash 3 charlie + 206 + 1419154 + 38 + 443101 end.

SC Roger, readback as follows. 093 dash 4 able + 310 - 1620 146 + 58 + 143420094 dash 4 able + 305 - 1619 148 + 34 163452095 dash 4 able + 257 minus 1630150 + 09 + 203350, 096 dash 3 able + 313 + 1339151 + 25 + 413430 097 dash 3 able + 299 + 1339, 153 + 01 + 353455 098 dash 3 charlie + 106 + 1419154 + 38 + 443101 over.

CAPCOM Roger. That is correct.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14417 (CDT: 10:20a) 447/1

CAPCOM Huntsville AOS. Huntsville AOS.  
SC Garble. Hey, Jack, do you have much this  
pass because we're going to be pretty well tied up doing -  
cameras back and forth.

CAPCOM Nothing except the morning news which I  
can read when ever you are able to -

SC We'll wait.

CAPCOM Fine.

SC Garble

PAO We are having a relatively quiet pass  
over the United States at this time. The crew indicated they  
would be quite busy taking photographs and we expect that  
they will be attempting shortly to get some additional pic-  
tures of Hurricane Gladys as they move out over the Gulf of  
Mexico and across the Florida peninsula. We will continue  
to monitor for conversations.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14427 (CDT 10:30a) 448/1

CAPCOM Apollo 7, Houston opposite omni,  
could you tell us which one you will be on when you switch?  
SC Able.  
CAPCOM Roger, understand able.  
SC (garble)  
CAPCOM Say again, Wally.  
SC We are watching in on the eye of the  
hurricane.  
CAPCOM Okay, real fine.  
SC It's south of us. Say, that's really  
a spinner.  
CAPCOM Copy.  
SC We are getting a very good definition  
here. You can see the start of it right below us now. Just  
going over the beginning of it. It's wide open to the west.  
SC It's a very spectacular view. The -  
there are a lot of broken clouds around the edge of it, but  
it tightens up in the center. A real tight vortex and we  
are spotting a few - quite a few thunderstorms about 100 miles  
outward - 150 miles off the center. There is a wide blue  
area and then it tightens up in the center and reaches a peak  
just like the thunderstorms we described in South America.  
CAPCOM Roger, copy that.  
SC Stand by for a mark. We are due south.  
Stand by, mark.  
CAPCOM Wally, was the mark right over the  
eye?  
SC That's affirm. The eye is south of us  
about 200 miles, 150 miles.  
CAPCOM Okay.  
SC Jack, on that run, we ran the 16mm  
movie camera at 1 frame per second, for a strip back from  
the west coast through the hurricane. We ran the panatomic  
film with red and green filters from the west coast through  
El Paso. We ran the S021 from El Paso through the hurricane,  
including Houston. The chief landmark tracking on El Paso,  
I'll have Donn fill you on that.  
CAPCOM Okay, real fine, Wally.  
SC Right now, we are doing nothing.  
SC You should have seen it up here, it  
looked like squirrels in a cage.  
CAPCOM Roger.  
SC Log this, Jack. Frame 142 is where  
we completed taking pictures of the hurricane at this time,  
I can't quite read - at 31, and just prior to that, we took  
three or four shots of the Houston area, which is wide open,  
the whole area down there. Everything stood out like a  
bell.  
CAPCOM Okay, copy that.

SC Magazine F. That's been one of our  
best passes today. It almost made us homesick.  
CAPCOM Roger.  
SC We plan to drop in in a few days.  
CAPCOM Roger, understand.  
SC Jack, I ended doing an unknown land-  
mark. The auto optics brought it in the sextant but  
I got behind it, it was moving so fast, and never did get  
a mark on the runway. You really got to get on it in a hurry  
because it's whistling by, so I ended up taking a little spot  
out in the desert and did an unknown landmark instead.  
CAPCOM Okay, copy that, Donn.  
SC Incidentally, the tracking pass itself  
in general is fairly easy to do if you get on it fast enough.  
The - I guess the hard part for me is in the procedural  
aspects of flipping switches and going through the program  
while the target is whistling by.  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Roger. We would like you to switch  
to the secondary tanks in quad charlie, give us a mark when  
you do it.  
SC You want the main off first or second-  
ary on first?  
CAPCOM Secondary on first.  
SC Roger. Stand by. All right, charlie  
is on. Primary charlie is coming off, mark.  
CAPCOM Okay, we are about to lose you over  
Bermuda here. We will pick you up at Ascension at 144 + 39.  
SC Roger.  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Walt, did you put any high bit rate  
in the DSE this last rev?  
SC Yes, sir.  
CAPCOM Roger, copy.  
SC We put it on when Donn was getting  
his state vector update.  
CAPCOM Okay.  
SC Would you like to hear what we have  
put on? It probably screws up your dump schedule, doesn't  
it?  
CAPCOM I've got a nod down here on that ques-  
tion.  
SC Okay, we will try and do that -

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1443700 (CDT 10:40a) 449/1

SC It will probably screw up your dump  
schedule if it does it.

CAPCOM I have a nod down here on that question.

SC Okay, we'll try to do that.

CAPCOM Walt, on the landmark tracking, about  
all we need to get is low bit rate.

SC Understand all you need is low bit rate  
for the landmark tracking.

CAPCOM Okay and we're going to lose you here  
at Ascension at 14445.

PAO This is Apollo Control. We've had LOS  
now of the Spacecraft from Antigua. A very active and  
interesting pass there on the latter part as Wally Schirra  
gave us a birdseye view from space, of hurricane Gladys,  
which he described as a real spinner and a spectacular  
view. He seemed to have been especially impressed with the  
tight vortex of the storm. Eisele also commented that, as  
you heard, on how busy things were in the cabin at the time.  
Describing he and his fellow crewmen as looking like a bunch  
of squirrels in a cage, and of course, we'll look forward to  
seeing some of the photos that the crew referred to and they  
apparently got some good ones on that pass, both still and  
motion picture of the Houston area and out on across the  
Gulf getting some good views of hurricane Gladys. We'll  
be picking up the Spacecraft again over the Ascension tracking  
station. Acquisition due there in about 6 minutes. This  
is Apollo Control at 144 hours, 40 minutes into the flight.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14445 (CDT: 10:48a) 450/1

PAO This is Apollo Control at 144 hours, 45 minutes and the spacecraft is coming up on the Tananarive or rather the Ascension Station at this time, and we have just acquired CAPCOM Jack Swigert, he has put in a call to the crew.

SC Go ahead.

PAO Shortly after this pass over Ascension is completed, the crew will be scheduled to conduct another land mark tracking exercise as they move over Southwest Africa. They will attempt to acquire Walvis Bay in the scanning telescope and once they have picked it up there, they'll transfer to the sextant and attempt to track and feed mark inputs into a computer. This information can then be used to determine their orbital parameters.

CAPCOM Apollo 7, Houston; we are 1 minute LOS Ascension. Tananarive at 145 plus 01.

PAO This is Apollo Control. The spacecraft has now gone over the horizon and is out of range of the Ascension Tracking Station. We'll acquire next at Tananarive and that's scheduled to occur in about 8 or 9 minutes from now. Flight surgeon Dr. Hawkins reports that the crew conditions appear to be improving; the crew reports that they are getting caught up on their sleep, the water in-take is good, and he says that Schirra and Eisele both report their colds are now somewhat improved. Walt Cunningham continues to report that there is some congestion, but says he feels fine. The space flight meteorology group said this morning that weather conditions for the flight of Apollo 7 will continue to be satisfactory over the next 24 hours, and in the West Atlantic landing areas, the weather will be partly cloudy with a few showers. In the East Atlantic skies will be fair to partly cloudy and in the Western Pacific landing areas the weather will be mostly cloudy with a few showers. In the Mid Pacific area, weather will be fair to partly cloudy, and as we heard, the astronauts again this morning, got a good look at Hurricane Gladys as the storm moves across the west coast of Florida. But later this afternoon it is anticipated that they will get a good view of Tropical Storm Gloria, located in the West Pacific. The spacecraft is due to pass almost directly over that storm. At 144 hours, 54 minutes into the flight, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14503 (CDT: 11:05a) 451/1

PAO This is Apollo Control at 145 hours, 3 minutes. The spacecraft has just passed from daylight into darkness crossing the terminator, and CAPCOM Jack Swigert has put in a call to the crew. We'll pick up there.

CAPCOM Apollo 7, Houston through Tananarive.  
Standing by.

SC This is Apollo 7.

CAPCOM Go ahead 7.

SC We got (garble) from that last one.  
(garble) calls for an update (garble) comes down.

SC (Garble)

SC (Garble)

CAPCOM Apollo 7, Houston; we are close to LOS Tananarive; we'll have ARIA on S band at 145 plus 12.

SC (Garble)

PAO This is Mission Control. We are about to lose acquisition of the spacecraft over Tananarive. The communications on that pass were not too good, as the spacecraft was passing well south of the tracking station. Just barely clipping the end off the acquisition circle. You heard the crew advise that they had gotten, been able to acquire the land mark on the southwest coast of Africa in the scanning telescope and had gotten 5 marks on it as they passed over through the sextant. The next station to acquire will be one of the 5 ARIA aircraft; that's scheduled at 145 hours, 12 minutes. Following that we will have a pass over Carnarvon, and on up just barely catching Guam over the Hawaiian Islands. At 145 hours, 7 minutes, this is Apollo Control

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14515 (CDT 11:18A) 452/1

PAO This is Apollo Control at 145 hours 16 minutes. We'll be coming within range of the station at Carnarvon shortly as the spacecraft passes just parallel to the northwestern Australian coast and out over the Pacific Ocean. We'll stand by now for the call to the crew from CAPCOM Jack Swigert.

CAPCOM Apollo 7 Houston through Carnarvon.

SC Roger, Houston.

CAPCOM Apollo 7, Houston. Opposite omni.

SC Say again, Jack.

CAPCOM Opposite omni, please.

CAPCOM Apollo 7, Houston, 1 minute LOS Carnarvon.

I'll pick you up at Guam at 145 plus 28.

SC Roger.

PAO This is Apollo Control. We're about to lose acquisition with the spacecraft over Carnarvon. We'll be acquiring next from the station at Guam. Coming up on this pass the Apollo 7 crew is scheduled to attempt another star count in daylight with the onboard sextant. The flight plan calls for that activity to occur as they pass over their upcoming stateside pass from Guaymas, Mexico, and out over the site at Mila. At 145 hours 25 minutes into the flight this is Apollo Control.

END OF TAPE

PAO This is Apollo Control at 145 hours 42 minutes. We recently completed a pass over Guam and we'll play that back for you in it's entirety, and then pick up with the pass over Hawaii.

CAPCOM Apollo 7, Houston through Guam

SC Say again.

CAPCOM and 7 we'll have a state vector update to send you over Hawaii.

SC (garble)

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Okay, I have a pad on this landmark tracking test that you're going to do here over pass beginning Hawaii.

SC Go ahead, partner.

CAPCOM Okay, The first landmark 10 it's south of ground track 65 miles, GET 145 plus 56 shaft 043, trunion 34. The weather's clear at this landmark. Second landmark 142 18 miles north of ground track GET 146 plus 17 shaft 347 trunion 31, looks like it's about three tenths covered.

SC Roger, We just got two to track, Jack?

CAPCOM Affirmative.

SC I see. I'll try to squeeze in an unknown one in the middle somewhere.

CAPCOM Okay, good. Walt, could we get you to switch the S band OX TV switch band off?

SC That's a good idea.

CAPCOM We pick up Hawaii at 145 plus 41.

SC Roger.

CAPCOM The last of the news that I didn't finish this morning. The National Institute of Health announced today that they have a development of a vaccine to prevent German measles. Tommy Smith won a Gold Medal in the 200 meter dash with a world record time of 19.8. Bob Seagren picked up the United State's sixth Gold Medal by winning the pole vault, with a world record of 17 feet 8 1/2 inches. George Foreman, of Houston, won a split decision in the opening round of the Olympic Boxing.

SC Sounds like the home team is doing Okay down there.

CAPCOM It sure is.

SC Jack, that hurricane is really a doozey. I haven't seen anything like that ever.

CAPCOM It's moving north, Wally, it should hit the coast of Florida, around Tallahassee.

SC What are the highest winds? (garble)

CAPCOM Apollo 7, Houston through Hawaii.

APOLLO 7 COMMENTARY, 10/17/68, GET: 14542 (CDT: 11:45a) 453/2

SC Go ahead.  
CAPCOM Roger; we would like to send you a state  
vector update whenever you're ready.  
SC Go man.  
CAPCOM Okay, coming up 7, and I'm ready to read  
you the nav check whenever you are ready to copy.  
SC Go ahead Jack.  
CAPCOM Okay, GET 144 plus 50 plus 0000 minus  
0936 minus 00891 1013.  
SC Is your update in now?  
CAPCOM Affirmative; the update is in; the com-  
puter is yours.  
SC Here's your read back Jack. Houston,  
did you copy the read back?  
CAPCOM Negative. I didn't copy the read back.  
SC It's on the DISKY.  
CAPCOM Roger. Copy the read back.  
SC Readback, hey?  
CAPCOM Roger.  
CAPCOM Apollo 7, Houston. Opposite OMNI.  
CAPCOM Apollo 7, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14552 (CDT 11:55a) 454/1

SC Jack, 3H143 and 144 are San Diego.  
CAPCOM Roger, copy that.  
SC Loud and clear, you can see all the way  
to North Island and Miramar, the whole scene.  
CAPCOM Wally, I have this sextant star count  
pad that I can give you anytime.  
SC I would like to finish this one landmark.  
CAPCOM Okay, in no hurry.  
SC Roger.  
SC Got 5 marks.  
SC Houston, Apollo 7.  
CAPCOM Go ahead 7.  
SC Roger, are you getting the data off of  
the computer?  
CAPCOM Affirmative.  
SC Roger, this is the alternate navigator  
doing the marking.  
CAPCOM Roger.  
SC And we again got all 0's on the Delta-R,  
Delta-V updates, and we have some changes to the landmark  
location on the lat - long and latitude. That point is  
3600 feet under water.  
CAPCOM Okay, let's copy that.  
SC We took (garble)  
SC The weather looks good on the Gulf,  
(garble) a little bit of scattered (garble) and that's just  
about it. Nothing west of you. (garble) over Freeport,  
clear as a bell.  
CAPCOM Wally, we're trying to save some Cal  
25 weather for you.  
SC Yes, I would like to get some of that.  
Same feeling here. Got a pretty big (garble) out now.  
Thanks for getting that storm out of the way, I appreciate  
that.  
CAPCOM Okay. Let me know when you are ready  
to copy that sextant star count pad? And Wally, something  
else that you might note here, we didn't copy any canister  
change or of the O2 purge which was about 4 hours ago.  
SC Yes, we've made the canister change and  
the O2 purge.  
CAPCOM Okay, I understand they are both complete.  
SC Four optical on the O2 purge?  
CAPCOM Roger, that was the one at 14130.  
SC When you check that off, we owe you  
that one, the canister was changed.  
CAPCOM Okay, copy that.  
SC Roger. we were busy TVing about purge  
time. Yes, we were on camera then, you know we weren't  
doing it.  
CAPCOM Roger, that's why we thought we would just  
ask.

APOLLO 7 COMMENTARY, 10/17/68, GET: 14552 (CDT 11:55a) 454/2

SC Oh, you're sneaky. Very good. Now,  
you know why we don't like the TV cameras. Ready on the  
update.

CAPCOM

Okay, this is star 23, roll 352 -

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14202 (CDT 12:05p) 455/1

CAPCOM Okay, this is star 23, roll 352, pitch 041, yaw 006. Star 31, the same roll, pitch, and yaw settings. This will get you within - these stars are within 35 degrees of the sun LOS.

SC Roger. GET of sighting?

CAPCOM Roger. 147 + 31.

SC Same number for both of them?

CAPCOM Roger, that is the same number for both.

SC Houston, Apollo 7.

CAPCOM Go ahead, 7.

CAPCOM Go ahead.

SC Roger. I was wondering if we could get an update for these 23 lunar landmark star -

CAPCOM Okay -

SC Like some attitude to fly to and the approximate time to do it. I could find it by myself but it might help a little if we had some ideas to what - I mean, what roll angle or pitch angle we will be in.

CAPCOM Okay, in work.

SC Okay.

SC Jack, frames 145, 146, and 147 were taken at 03, 03 minutes.

SC Houston, do you copy?

CAPCOM Roger, copy that.

SC Roger.

SC 178 to take in the time the zero switch will stay off.

CAPCOM Roger.

SC I've got that magazine full up.

CAPCOM Copy.

SC (garble) 9150 to take in that 0735 engine (garble) 10 seconds.

CAPCOM Copy.

SC We must be doing more tracking today.

CAPCOM Say again, Wally.

SC Did we do perigee?

CAPCOM You are just passing perigee now.

SC Okay. Our pitch rate changed for nothing.

CAPCOM Okay, copy.

SC (garble)

CAPCOM I didn't copy that last, Wally.

SC That was pitch down 30 degrees, and it came right back up, almost to SEF. I had to stop it.

CAPCOM Okay, copy.

SC We've got an outside station coming in beautifully right now. (garble)

APOLLO 7 COMMENTARY, 10/17/68, GET: 14202 (CDT 12:05p) 455/2

CAPCOM Roger, understand.  
SC (garble)  
SC Roger. We are stable now right at  
the perigee attitude.  
CAPCOM Roger, copy. We are about 1 minute  
LOS Antigua. We will pick you up over Ascension at 146 + 19.  
SC Roger.  
PAO This is Apollo Control. We have just  
lost contact with the spacecraft over Antigua as the space-  
craft moves down over the northeastern coast of the South  
American continent, just parallel to the coast. You heard  
Wally Schirra note a phenomenon they had noted before on  
this mission, what appears to be a very small amount of  
aerodynamic drag the spacecraft encountered at perigee.  
Schirra reported that they were in a 30 degree pitch down  
attitude and for no apparent reason, the spacecraft pitched  
back up into the horizontal attitude. At the present time,  
the spacecraft is in an orbit about 153 nautical miles at  
its highest point and slightly under 90 nautical miles at  
the low point. This is essentially the orbit that we have  
been in since that third service propulsion system burn.  
We have noted a slight decrease in the apogee since that  
time. The perigee following the burn was 90 miles, essen-  
tially the same as it is now. Apogee immediately following  
the burn was about 160 nautical miles, so we have lost about  
7 nautical miles in apogee, but perigee has remained essen-  
tially the same. We will acquire the spacecraft again at  
Ascension and acquisition there is scheduled to occur at  
146 hours 20 minutes, or about 7 minutes from now. This is  
Apollo Control at 146 hours 13 minutes.

END OF TAPE

APOLLO 7 COMMENTARY 10/17/68, GET: 14620 (CDT 12:24P) 456/1

PAO This is Apollo Control at 146 hours 20 minutes, and we have just put in a call to the crew over Ascension. We'll pick that up now.

SC And the thing came into view about a minute and a half earlier than the time you gave us. It was away off to the north, more than just 18 miles, in fact we had to yaw 20 degrees to be able to see it, and anyway Donn was able to get two marks on it before we lost it, and we've got three new updates for DELTA-R DELTA-V, but we've got some huge changes on the land mark coordinants.

CAPCOM Okay, we copied that, Donn.

SC It's conceivable he could have marked on the wrong point, but I don't think he could have been that far off.

CAPCOM Okay, we have some information on this P-23 moon star sighting.

SC Okay, stand by.

FLIGHT FAL FLIGHT, I'm still standing by for your reply.

CAPCOM Attitude

SC Roger, go ahead with your update, Jack.

CAPCOM Okay, Donn, at a GET of 146 plus 00 plus 00 a roll of 347 pitch 097 yaw 011 should be the land mark line of sight on the moon.

SC Roger, Stand by Jack, my pencil crapped out.

SC Roger, I've got 146 on the hour, is that right?

CAPCOM No sir, 146 plus 40 plus 00, the roll 347, pitch 097, yaw 011 will put the land mark line of sight on the moon.

SC Okay.

PAO This is Apollo Control. We've had loss of signal now from Ascension. The next station to acquire will be the tracking station at Tananarive. At 146 hours 26 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET 1461911, CDT 12:23p 457/1

Dead air.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14636 (CDT: 12:39p) 458/1

PAO This is Apollo Control at 146 hours, 36 minutes. Apollo 7 is crossing the southern tip of Africa and coming up on the station at Tananarive. We'll stand by for a call to the crew from CAPCOM Jack Swigert.

CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Apollo 7, Houston.  
SC Roger.  
CAPCOM Don, we are poor com; we are over Tananarive; like to give you an updated GET for this moon star sighting of 147 plus 00 plus 00.  
SC The (garble) is up Jack (garble)  
CAPCOM Roger, that's E23 moon star sighting, time should be 147 plus 00 plus 00.  
SC Little (garble) on that.  
CAPCOM Okay.  
SC (garble) through the hole, Dave.  
CAPCOM Roger, copy.  
SC (garble)  
CAPCOM Copy.  
SC Hey Jack, while we (garble) flight, (garble) today is (garble).  
CAPCOM Walt, I didn't copy that; com is pretty poor here over Tananarive, because of a low elevation angle on the antenna. We would like you to switch your PMP power to OX for this com test that we are going to do over Guam.  
SC Roger; when do you want me to switch?  
CAPCOM Right now Walt.  
SC Okay, done.  
CAPCOM Roger.  
CAPCOM 7, we are about 1 minute LOS Tananarive; we have a real low angle pass at Carnarvon 146 plus 52.

PAO This is Mission Control. We had a very difficult communications on that pass over Tananarive; the spacecraft passed the station just about on the horizon and will be acquiring at Carnarvon, Australia, in about 10 minutes from now and also that will be a low elevation pass, and we would expect rather brief and perhaps difficult communications through that station also. At 146 hours, 42 minutes, this is Apollo Control

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14652 (CDT 12:55p) 459/1

PAO This is Apollo Control at 146 hours, 52 minutes and we've just acquired the spacecraft at Carnarvon. We'll pick that up for you here.

SC Donn and Walt are trying to con me out of my ham and applesauce by offering me a whole meal for it. (garble).

CAPCOM Apollo 7, Houston.

SC Roger.

CAPCOM Roger, we just got you in the middle of your transmission Donn, could you say again?

SC We were just recording some comments on our food up here.

CAPCOM Okay.

SC We were saying that Wally and I were trying to give away our butterscotch pudding, but no one wants it. Walt likes to collect cocoa, so we can give our cocoa to him, and both of them were trying to con me out of my ham and applesauce. Walt offered me a whole meal for one dip. I guess, the message is, that we get a little tired of the various sweet things and we still go for the meats, fruits, and salads.

CAPCOM Okay, copy that.

SC I tried to call you before over the last station. I had a corn chowder bag failure, the second one of this type. It failed down where the spout comes out. It's failed down, right down where, it goes into the bag itself and the meal comes out some other hole.

CAPCOM Okay, copy that.

SC And it always happens to my favorite food.

CAPCOM Roger. This is about the best comm we've had. Is there an elevation angle -

CAPCOM We're 1 minute LOS Carnarvon, we'll pick you up at Guam at 147 plus 01.

SC Thank you.

PAO This is Apollo Control, we've lost acquisition with the spacecraft at Carnarvon as you heard on that pass. Crew apparently having lunch at this time. In a short while, CMP Donn Eisele is scheduled to begin his sleep period. We will be reacquiring the spacecraft over Guam. That acquisition scheduled at 147 hours, 1 minute or about 6 minutes from now. At 146, 56 minutes, this is Apollo Control

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14701 (CDT 1:05 P) 460/1

PAO This is Apollo Control at 147 hours  
1 minute. Now we are just about to put in a call to the  
spacecraft over Guam. Let's listen in.  
CAPCOM Apollo 7 Houston through Guam.  
SC Roger.  
CAPCOM Walt, will you turn up your S-band volume.  
We'll start this comm load check.  
SC S-band volume up.  
CAPCOM Okay.  
CAPCOM Guam M and O Houston CAPCOM.  
CAPCOM Guam M and O Houston CAPCOM.  
GWM Go CAPCOM.  
CAPCOM Roger Guam M and O. Would you disable  
VHF key?  
GWM VHF disabled.  
CAPCOM Roger  
CAPCOM Apollo 7 Houston.  
SC Roger Houston I'm reading you loud  
and clear.  
CAPCOM You are loud and clear also. Walt,  
up over Hawaii we're going to have a state vector and DAP  
load update for you - to send you.  
SC Roger.  
CAPCOM And after the DAP data load we'd like to  
get a verification of Noun 47 and Noun 48. This is -  
SC You'd like verification of what?  
CAPCOM Noun 47 and Noun 48 in the DAP data  
load. This is in preparation for burn 05 tomorrow.  
SC Roger, understand so we'll go to ACCEPT  
on your call over Hawaii.  
CAPCOM Okay, real fine.  
CAPCOM Walt, if you're ready I can give you  
the NAV check for this update over Hawaii - I can give it  
to you now.  
SC We'll pick it up at Hawaii while you are  
uplinking us.  
CAPCOM Okay, no problem.  
SC Houston, Apollo 7.  
CAPCOM Go ahead 7.  
CAPCOM Go ahead Apollo 7.  
SC John, Donn's turning his S-band up.  
He want to give you his data.  
SC Houston, Apollo 7.  
CAPCOM Go ahead.  
SC Roger. I don't know if you can read  
this on the computer. I've got P-23 up and I've got Alfine  
placed on land mark 05 on the moon, and these are the shaft  
and trunnion angles. do you read them down there?  
CAPCOM Roger, I'm copying them.

APOLLO 7 COMMENTARY 10/17/68, GET: 14701 (CDT 1:05P) 460/2

SC Okay. I'll tell you that was one  
whale of a lot easier than that crazy earth horizon business.

CAPCOM Roger, copy.

SC We're going to leave it here and do it  
again so the other guys can have fun with it.

CAPCOM Guam M and O Houston CAPCOM. Do you  
want to enable VHF key?

CAPCOM Guam M and O Houston CAPCOM.

GWM Guam go.

CAPCOM Roger, would you enable the VHF key.

GWM VHF enabled.

CAPCOM Apollo 7 Houston, 1 minute LOS Guam,  
Hawaii at 147 plus 16.

PAO This is Mission Control. We've lost  
contact with the spacecraft over Guam. Our flight controllers  
here in Mission Control have been consistently pleased with  
the high quality of the unified S-band communications system,  
especially when we've have a high elevation pass such as  
this one on Guam where the spacecraft passed almost directly  
over head the station. We will acquire the spacecraft again  
over Hawaii, at 147 hours 17 minutes, that will be about  
7 minutes from now. At 147 hours 11 minutes this is Apollo  
Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14717 (CDT 01:20p) 461/1

PAO This is Apollo Control at 147 hours  
17 minutes. The spacecraft is approaching Hawaii. We will  
have acquisition shortly and we will stand by for a call to  
the crew.

CAPCOM Apollo 7, Houston.

SC Roger, 5 by.

CAPCOM Okay. If you will go to accept, we  
will send you a nav load and then a DAP update.

SC Houston, can we wait on this pass?

We've got a DTO going here and we need the computer for it.

CAPCOM Okay, that is fine.

SC I'll take the pad for the nav check.

CAPCOM Okay. GET 154 + 30 + 0000 + 1486 +  
032741368.

SC Roger, Jack. We will take your update.

We are in accept.

CAPCOM Okay, coming up.

SC Okay, readback follows. 15430, 4  
balls, + 1486 + 032741438 over.

CAPCOM Negative on the last one, Walt. 1368.

SC 1368. Sorry.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Okay, Wally. We are gradually picking  
up an increase in CO2 there. You may have gotten a bad  
canister at that last change.

SC Roger.

SC We've had this particular test here,  
by the way, this very brilliant star count test. Has us  
right up in the perigee torque area. We are going to really  
hnose the fuel out.

CAPCOM Okay, copy that.

SC Now this one is on the experiment,  
too. We are going to have some right interesting comments  
to make about celestial navigation when we get back.

CAPCOM I - there are going to be a lot of  
people who are going to be interested.

SC Jack, we are reading 1 mm, shouldn't  
we go ahead let this thing hang in here until it gets up  
close to 76.

CAPCOM Roger. We are just trying to give  
you a little bit of hack ahead of time, so you will know  
what to look for.

SC Well, our criteria is 76, so we have  
not been concerned. It's just turned out to be the first  
one we've ever seen over 1, that's all.

CAPCOM Roger.

SC May we have the computer?

CAPCOM Roger, 7. We would like to verify

APOLLO 7 COMMENTARY, 10/17/68, GET: 14717 (CDT 01:20p) 461/2

CAPCOM the DAP data load. Not at this time,  
but some time later on.

CAPCOM We would just like a verification on  
noun 47 and 48 and a DAP data load, prior to tomorrow's  
burn. The computer is yours at this time.

PAO This is Apollo Control at 147 hours  
24 minutes. We have gone beyond range now of the Hawaiian  
station and we will come back up with any conversation that  
develop between the crew and the ground over the Huntsville  
and from the Guaymas station.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14730 (CDT 1:35p) 462/1

PAO This is Apollo Control at 147 hours, 31 minutes. The spacecraft is now passing over Baja, California, and will be going down across the Mexican Continent, rather the country of Mexico and over the South American Continent. Coming up, the start of Rev 94. We just put in a call to the spacecraft from the Corpus Christi station, we'll join the conversation there.

CAPCOM Apollo 7, Houston. I have your map update.

SC Go ahead, Jack.

CAPCOM Roger. Rev 93, time of the node 146 plus 58 plus 58, longitude 122.4 east. We are about 1 minute LOS. We'll pick you up at Tananarive at about 148 plus 0 niner.

PAO This is Apollo Control at 147 hours, 37 minutes. We've had LOS now with the spacecraft. The next station to acquire will be Tananarive, off the south-east coast of Africa, and we'll pick up the spacecraft there in about 25 or 30 minutes. At 147 hours, 37 minutes, this is Apollo Control.

END OF TAPE

SC Houston, Apollo 7.  
 CAPCOM Go ahead, Apollo 7.  
 SC Roger, (garble) 47 plus 2 balls 164  
 plus (garble)  
 CAPCOM Apollo 7, Houston.  
 SC Roger, Jack, did you read down 47.  
 CAPCOM Negative Walt, you got it just as  
 we were handing over stations here. Could you say it again?  
 SC Can you read our DSKY? Can you read our  
 DSKY, Jack?  
 CAPCOM Negative right now walt.  
 SC Okay, down 47 plus 2 balls 164 plus  
 2 balls 551 plus 29560 down 48 minus 3 balls 76 minus 3 balls  
 47 plus 02110, over.  
 CAPCOM Okay, we copy that. Could you place  
 your PMP power now to normal?  
 SC It's in normal.  
 CAPCOM Copy.  
 SC Hey, Jack, somebody write down and leave  
 it on my desk so when I get back I can see how many different  
 comm modes they've checked out on this flight.  
 CAPCOM Okay, we'll get it to you.  
 SC (garble) LOS.  
 SC Hey, Jack, do you have time for a map  
 update?  
 CAPCOM Map update in work.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14809 (CDT 02:13p) 464/1

PAO This is Apollo Control at 148 hours 09 minutes. The spacecraft is now crossing the southern tip of Africa and are in the middle of a night side pass. We will be acquiring at Tananarive shortly. At the present time, the crew should be involved in completing power down of the guidance and navigation system and the stabilization and control system aboard the spacecraft. Command module Donn Eisele is well into his sleep period, according to the flight plan. We will stand by now for acquisition at Tananarive.

CAPCOM Apollo 7, Houston through Tananarive.  
SC Roger, Jack. Read you loud and clear.  
CAPCOM Wally, I would like to ask if you  
powered down?  
SC Affirmative.  
CAPCOM Okay, thank you.  
SC In our suit - decrease, left about a  
suit temperature of about 64 degrees just before power down,  
and held there for a while after power down. Surely we've  
got more (garble) power up plus holding real great for 4 to  
5 zeros (garble) pretty hot. We (garble) very easily.  
Read that?

CAPCOM Roger. You were a little bit garbled  
but I think we've got most of it.  
SC Okay. On the star check, two stars  
called up by the program were seen, no others, with the  
sextant.

CAPCOM Roger, understand.  
SC Here comes Canary (garble)  
CAPCOM Go ahead.  
SC (garble)  
SC (garble)  
CAPCOM Roger, we copy. We are digesting that.

Wally.  
SC Say again.  
CAPCOM We copy all that.  
SC We ran all that back today and it  
looked awful (garble) I didn't want to do it before our  
first turn but it can foul up our time lines considerably.

CAPCOM Roger, copy.  
SC Roger.  
SC (garble)  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Wally, is the suit temperature or  
cabin temperature getting a little more comfortable now that  
you have powered down?  
SC (garble) we are down to about 58  
degrees right now.

APOLLO 7 COMMENTARY, 10/17/68, GET: 14809 (CDT 02:13p) 464/2

CAPCOM Okay, copy.  
SC Roger.  
SC Jack, (garble) but you should try to  
avoid burnout at SCS or PVS at more than 20 degrees after  
perigee, over.

CAPCOM Okay, I copied that, Wally.  
SC Very good. (garble)  
SC (garble) on the fuel and the attitude.  
CAPCOM Okay, understand. We are getting  
pretty close to LOS Tananarive. We will pick you up at  
Guam at 148 + 36.

SC Roger.  
CAPCOM And Mercury at 148 + 33.  
PAO This is Apollo Control at 148 hours  
18 minutes. We had some garble on the communications that  
time over Tananarive. We did copy Schirra's comment that  
the temperature of the gases flowing into the cabin, I  
believe that would be the suit inlet temperature reading,  
since the crew is not wearing suit at this time, but that  
still provides the reading for the gas flow into the cabin  
and he said it had gotten up to 64 degrees during the time  
that the spacecraft was fully powered up. Now that the  
guidance and navigation system has been powered down, along  
with the stabilization and control system, Schirra noticed  
that the cabin temperature had dropped down to about 58  
degrees. A 64 degree reading is still low within the com-  
fort level for airflow into the cabin, the 58 is a little  
bit more nominal, however. Our next acquisition of the  
spacecraft will be over the tracking ship Mercury and we  
will have overlapping coverage there from Guam, scheduled  
to pick the spacecraft up next at 148 hours 33 minutes,  
about 14 minutes from now. This is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1483300 (CDT: 2:37p) 465/1

PAO This is Mission Control just a little more than half way through the 94th revolution. The spacecraft is coming up on the tracking ship Mercury. We have been advised that the unified S band antenna at Mercury is down temporarily; they expect to have it back in operation within about an hour, but we will not have unified S band coverage over Mercury. However, that will be for a relatively short period of time and we move on across the Philippines and out toward Guam; we'll pick US band coverage from Guam. We'll stand by now for a call to the crew.

CAPCOM Apollo 7, Houston through the Mercury.

SC Roger; read you loud and clear.

CAPCOM Roger; read you also.

SC (garble) about 25 minutes.

SC Garble

CAPCOM -

SC Jack

CAPCOM Go ahead Walt.

SC Okay, I guess we'll clean that water

today; 39 percent -

CAPCOM Okay, your - Wally, your about 2 by here; you're pretty garbled. We might have a little bit of luck over Guam, which is coming up here.

SC Okay; we will chlorinate water today.

CAPCOM Okay; we understand.

PAO Communications rather garbled there, using the VHF system in the absence of S band from the Mercury. Schirra advised that the crew would chlorinate the spacecraft water tonight, at least that's the way we copied it here, and we can expect communications to clear up somewhat as we move over Guam.

CAPCOM Apollo 7, Houston.

SC Apollo 7, here.

CAPCOM Roger; go ahead Apollo 7.

SC We have a chance to rest up after our today's operations.

CAPCOM Understand you want to get a present fuel status?

SC Not big concern; any time.

CAPCOM Okay, we are summarizing that now; we'll probably have it up to you over Hawaii.

SC Very good.

CAPCOM Apollo 7, your fuel number for your onboard chart is 666.

SC Roger; read like 666.

CAPCOM Apollo 7, 1 minute LOS Guam; Hawaii at 148 plus 51.

SC Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14843 (CDT 2:47P) 466/1

PAO                      This is Apollo Control. We are about to lose contact with the spacecraft over Guam. During that pass Wally Schirra requested a status report on the service module RCS propellant quantity and was advised he has 666 pounds remaining. We'll pick up the spacecraft again over the Hawaiian tracking station. Acquisition is scheduled there at 148 hours 51 minutes. At 148 hours 43 minutes this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 14851 (CDT: 2:55p) 467/1

PAO This is Apollo Control at 148 hours, 51 minutes. We have just acquired on the spacecraft and established contact; here is the conversation.

CAPCOM Message for you here.

SC Walt's off com right now. Do you want me to relay or should I get him up?

CAPCOM Okay, Wally, are you in the right seat?

SC Say again.

CAPCOM Can you get in the right seat to do some readings of a couple of gages here?

SC Stand by. Go ahead.

CAPCOM Okay Wally. Prior to this 02, fan tank 02 tank fan cycle that we are going to give you here, we would like to read out phase A, B and C on AC bus 2.

CAPCOM Roger; phase A is 150.5 B 115.5 and C 115.

CAPCOM Okay, now Wally we would like to turn 02 fans tank 2 on now; and then read out A, B, and C again.

SC Fans 2 on now. Phase A is (garble) about 116, B is 115.7, and C is still 115.

CAPCOM Okay, Wally; after 3 minutes of fan on, we would like to have you be reading AC2 phase B when you turn the fans off.

SC Prior to, or subsequent?

CAPCOM Right during the switch operation, when you turn the fans in tank 2 off, be reading phase B.

SC Okay.. (garble)

CAPCOM I didn't copy that Wally.

SC That's a good job down there of sacking out that AC (garble) problem.

CAPCOM Roger; thank you.

CAPCOM Kinda crank when it first happened.

CAPCOM I don't blame you a bit.

SC I like to feel direct-direct coming home.

SC Hey, Jack, you with me?

CAPCOM Roger Wally; go ahead.

SC Did you ask someone in the support room how many frames per foot there are in the 16 mm camera?

CAPCOM Okay, we'll get it.

SC Thank you.

SC Jack?

CAPCOM Go ahead.

SC Okay, we just ran the switch valve test and Walt looked at the phasing light on the switch (garble) about a quarter of a volt to half a volt.

CAPCOM Okay - thank you very much Wally. I have some RCS redline data for you.

SC Stand by.

SC Go ahead

APOLLO 7 COMMENTARY, 10/17/68, GET: 14851 (CDT: 2:55p) 467/2

CAPCOM Okay, for service module, for an SCS service module RCS de-orbit the value is 581.

SC Okay.

CAPCOM Okay, for adapt RCS de-orbit the value is 5 through 0, and the value for HYBRID de-orbit the value is 223.

SC Roger

CAPCOM Okay, we show quad A is just a smidgen under the SCS redline but has ample margin for adapt R de-orbit.

SC Roger. Jack, on these land marks sighting that you call up to us for targets of opportunity.

CAPCOM Roger

SC If you all could keep book on that we missed Luzon this last pass we might have had our (garbled) on it (garbled)

CAPCOM Okay, you are a little bit hard to read we'll pick it up on the recorder here.

SC On the land mark passes?

CAPCOM Yeah, go ahead.

SC Maybe you can give us the time before they come up whenever they supposed to figure right on the flight plan.

CAPCOM Okay, real fine. After we hand over to Huntsville - to - we get through to Huntsville here we are going to hand over to ARIA so you might turn up your S-Band volume in a couple of minutes we'll have ARIA coverage on S-Band for about another four or five minutes.

SC Very good. There's a good watch today.

CAPCOM Its been a good day, we've done a lot.

SC We sure did.

CAPCOM We're looking forward to tomorrow.

SC Very fine.

CAPCOM Apollo 7 Houston.

SC Houston go ahead

CAPCOM Okay, Wally, on that question that you asked the 16mm camera frame - for oh - four zero frames per foot of film.

SC Okay, I think we have that on the back of them.

CAPCOM I didn't copy that last little, Wally.

SC How much footage do we have in the magazine?

CAPCOM Okay, Stand by. Wally, there are 130 feet per magazine.

SC Roger, thank you.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1501600 (CDT 4:20p) 469/1

PAO This is Apollo Control at 150 hours and  
16 minutes. Apollo 7 passed over the tracking station at  
Tananarive and Mercury during the news conference. We'll  
play the tapes of those passes now.

CAPCOM Apollo 7 Houston through Tananarive.  
Apollo 7 Houston Tananarive standing by. Apollo 7 Houston  
one minute LOS Mercury at 06.

SC Roger, Apollo 7  
Capcom Roger, I read you that time.  
SC Roger, I read you, Ron.  
CAPCOM Mercury, Houston COMTECH, voice check,  
are you read.  
SC Roger, you're loud and clear.  
CAPCOM You're the same, thank you very much.  
SC Roger  
CAPCOM Apollo 7 Houston, standing by.  
SC Roger, loud and clear.  
CAPCOM Roger, same.  
SC Donn Eisele wants 20 clicks of water  
logged and two aspirin.  
CAPCOM Roger  
SC Log the LMP with 16 clicks of water.  
CAPCOM Roger  
SC How's it going down there?  
CAPCOM Real fine, beautiful day down here today.  
SC We got some beautiful pictures of it.  
CAPCOM Very good.  
SC Is anybody getting tired of this long  
flight or anything?  
CAPCOM No, not really. Like to be there with  
you.  
SC Very good route.  
CAPCOM Good.  
SC That hurricane was really something to  
see. It stood out very clearly today.  
CAPCOM Apollo 7 Houston  
SC Go  
CAPCOM Roger, we concur on negative TV tomorrow.  
SC Very good.  
CAPCOM Apollo 7 Houston, looks like pins have  
come undone on LMP's biomed harness somewhere in there.  
SC Okay, Roger, we'll get it glued together.  
CAPCOM Roger.  
SC Okay, Ron, I'll get on it. The reason  
for that is because I've got kinda of spider's web leads  
down here even after they made this harness over I've got  
about six inches extra on one lead and the others are fairly  
pretty tight, I guess.

APOLLO 7 COMMENTARY, 10/17/68, GET: 1501600 (CDT 4:20p)469/2

CAPCOM Roger, I understand.  
SC But I've got this ground wire on so  
whatever you do comes through good down here.  
CAPCOM It was real good for a long time there,  
Walt, then last night we noticed that it look like maybe the  
ground lead was possibly showing partially loose or something  
like that, the sensor, that is.  
SC Okay, I'll tell you what happened.  
CAPCOM You've got a one line update to your  
targets of opportunity for two balls five, that's two balls five.  
SC Yeah  
CAPCOM Roger, its the area North of the Colorado  
river.  
SC North of the Colorado river? Sicily?  
CAPCOM Rog, evidently it must be in the mountains  
up in there cause the river -  
SC The Colorado river runs North and South,  
It sounds like Alaska.  
CAPCOM Me, too.  
SC Ron, we'll try to figure it out just for  
the fun of it. What does burn five do to our inclination,  
does anybody have a story on that, its no big deal, just  
curious?  
CAPCOM Rog, will check into it, I've got the -  
Apollo 7 Houston, opposite omni.  
SC Ron, while I'm looking at it, do you  
have any typhoons in the Far East, or typhoons in the  
Phillipines?  
CAPCOM I'll check on it. I don't recall seeing  
any on the map there this evening.  
SC Hawaii and Australia, were you worried?  
CAPCOM Apollo 7 Houston about one minute to LOS.  
SC Roger  
CAPCOM Now you're preburn inclination 31.22  
and post burn 30.80. GETI will be about 165 plus 00.  
SC We thought we'd drive it in a little bit,  
okay?  
CAPCOM And Delta V 1646, burn about a minute  
and six seconds.  
SC Roger, North of the Colorado river we  
wont get to for awhile.  
CAPCOM Yeah. That's right.  
PAO This is Apollo Control, 150 hours and  
21 minutes. That's the end of the tape through the Mercury  
pass. As you heard the flight director has concurred with  
the crew's recommendation that there'll be no TV tomorrow  
because of the activity in the flight plan associated with  
this long number five SPS burn. The crew reported good

APOLLO 7 COMMENTARY, 10/17/68, GET: 1501600 (CDT 4:20p)469/3

pictures of our good weather down here. Lunar Module Pilot is having biomed harness problems again but he is repairing that now. There's was good com on this pass in which they discussed that burn. I'll go over those figures for you again though. These are the best numbers available at this time, we are looking for the burn at about 165 hours elapsed time. Duration of the burn one minute, six seconds, Delta V at 160046 feet per second. We'll change the inclination of the orbit from 31.22 to 30.08 and we're predicting the orbital parameters post burn to be an apogee of 241 miles, perigee of 89.6 miles. Present apogee is 152.1, perigee 89.7, those are nautical miles. We're showing an orbital weight of Apollo 7 at the present time of 29 538 pounds. Hawaii will acquire the spacecraft in about a minute, we'll come back up then.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1502400 (CDT 4:30P) 470/1

PAO This is Apollo Control at 150 hours 24 minutes. Hawaii has acquired now and we'll stand by.  
CAPCOM Apollo 7, Houston through Hawaii.  
SC Roger.  
CAPCOM Roger. Loud and clear.  
SC Same.  
CAPCOM You're right. Tropical Storm Gloria is due east of Luzon about this time, so you probably saw it when you were going by there.  
SC Roger, that's what we call (garble) Ron.  
CAPCOM Roger.  
SC That's two for Apollo 7, now isn't it?  
CAPCOM That's correct.  
CAPCOM 7 Houston. We've got a new update on the amount of film in your magazines. You have 8 zero feet in 16 mm magazines.  
SC Fabulous. oh, 8 zero feet instead of 130, that's not fabulous. Okay.  
CAPCOM Yeah, that's right.  
SC Okay, I'll zero in and let you take over again then. I guess you can see that it by telling us how long we can run it, uh, 1 frame, 6 frames and 16.  
CAPCOM Roger. I'll get that information.  
SC Okay. We mapped the whole southwest corner of the United States in 1 frame F a second on an 18 MM camera, today.  
CAPCOM Okay.  
SC That was from, oh, just west of San Diego all the way through to the hurricane on into Florida.  
CAPCOM Roger.  
SC That was done on SO 36840 in case anybody gets excited.  
CAPCOM Roger.  
CAPCOM Wally, you might be interested, they're not even waiting for you to get back. We're using the third deck there for simulations, tonight, for the next mission.  
SC That sounds good, Ron.  
CAPCOM Roger. We're using - they're simulating the next mission upstairs, tonight.  
SC Very good. Tell them to take better food along with them.  
CAPCOM Okay.  
CAPCOM Apollo 7, Houston. I have your film run times, there.  
SC Take it, Ron  
CAPCOM Roger, I have your film run time, your 16 mm run time.  
SC Okay.  
CAPCOM At 1 frame, it's 53 minutes 20 seconds

APOLLO 7 COMMENTARY, 10/17/68, GET: 1502400 (CDT 4:30P) 470/2

CAPCOM At 6 frames it's 8 minutes 54 seconds,  
at 16 it's 3 plus 20

SC Okay, thank you.

CAPCOM Apollo 7 Houston. S-band volume up at  
35 plus 3 zero for ARIA.

SC Roger. 35 3 zero.

SC Ron, 3152 on the (garble) back. That  
was on the big island of Hawaii.

CAPCOM Roger.

SC (garble) LOS

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET 15034 (CDT 4:40 p) 471/1

PAO This is Apollo control at 150 hours 34 minutes, we'll pick up the ARIA aircraft again this pass, in just about a minute so we will have some extended coverage and we'll continue to stand by through the ARIA pass.

CAPCOM ARIA three, go remote.  
SC ARIA three, clear and loud, go ahead.  
CAPCOM Apollo 7, Houston, through ARIA three, S-band.

CAPCOM Apollo 7, Houston, through ARIA, over.  
SC Go ahead, Houston.  
CAPCOM Apollo 7, Houston, you broke up that time say again.

SC garble.  
CAPCOM Roger, you're still breaking up.  
SC Roger, you're very weak.  
CAPCOM Roger, coms not too good this time.  
SC garble.  
CAPCOM Roger, I copied that.  
CAPCOM Apollo 7, Houston, you should be closer to ARIA now, is the voice any better.

SC garble.  
CAPCOM Still not much better. You're still breaking up and I must be coming through weak still.  
CAPCOM Apollo 7, Houston, one minute LOS Tananarive at 17.

PAO This is Apollo control 150 hours 40 minutes into the mission, Apollo 7 out of range of ARIA three now, during this coverage, which started at a - Hawaii, some slight overlap at the Huntsville tracking ship and then into the ARIA aircraft range, there was film reports passed back and forth. The crew was advised the tropical storm Gloria is now due east of Luzon and they will obviously attempt to take a look at that their next pass in that area and we advised the crew that flight controllers for Apollo 8 are beginning simulation for that mission. The next station to acquire will be Tananarive at 151 hours 17 minutes. This is mission control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1511700 (CDT 5:20P) 472/1

PAO This is Apollo Control 151 hours 17 minutes. Apollo 7 is in the night side of its 96th revolution. Tananarive is about to acquire. We'll stand by for this pass.  
CAPCOM Apollo 7, Houston, through Tananarive standing by.

SC Loud and clear.

CAPCOM Roger, the same.

CAPCOM Apollo 7 Houston. 1 minutes LOS. Mercury at 41.

SC Roger.

PAO Apollo Control at 151 hours 24 minutes. Tananarive has LOS. There are no activities scheduled on the flight plan during this period. And Apollo 7 passed Tananarive without conversation. The tracking ship Mercury will acquire next. At 151 hours 40 minutes, this is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 15140 (CDT 5:45 p) 473/1

PAO This is Apollo control at 151 hours 40 minutes into the mission, Apollo 7 coming up on the Mercury now, we'll listen.

CAPCOM Apollo 7, Houston, through Mercury, standing by.

SC Roger.

CAPCOM Loud and clear.

SC frames, 154 and 155, over Japan.

CAPCOM Roger, copy.

SC Lot of magazines here.

CAPCOM Roger. 7, Houston, you've attempted biomed test we still have no (garble).

SC Ron, I went ahead and checked all these things, they're all made up and I don't think there's anything else I can do, but I'll check them again when I go to bed in a little bit, but they look to me like everythings okay.

CAPCOM Okay, we might have the internal break or something in one of the wires and we'll work on it later, no sweat.

SC Along the (garble) the stow on the top.

CAPCOM Say again.

SC Frame 155 (garble).

CAPCOM Roger.

PAO This is Apollo control at 151 hours 47 minutes, the Mercury has LOS. Brief transmission during this pass, Wally Schirra gave some film reports, indicating that he had done some photography over Japan including Mount Fujiyama. We told the lunar module pilot, Walt Cunningham, that we still are - still are unable to get a reading on his biomed, he believes that he's done all he can to fix the harness, but we'll continue to pursue that problem. The next station to acquire will be Hawaii at 151 hours 58 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1515800 (CDT 6:00p)474/1

PAO This is Apollo Control at 151 hours and  
58 minutes. Hawaii has Apollo 7 now.  
CAPCOM Apollo 7 Houston, we're reading 104 and  
up.

SC (garbled)  
CAPCOM Roger, 103.  
SC Roger. Hey, Ron, the - we've done the  
check on the component, go.

CAPCOM Roger, Seven Houston, sometime when you  
get a chance there we could use a - more or less a taste  
versus time summary on your water.

SC Say that again.  
CAPCOM Roger, we could use a kinda of a taste  
versus time from chlorination on the potable water.

SC Well, now you've brought the subject up  
you want to talk to him. (Schirra begins talking). We just  
put the chlorine in about 15 minutes ago. Just before this  
pass. We are a little concerned about the rate we put it  
in. Its a rather brown looking goupy thing at the base of  
the chlorine injector and I'm not sure ... .. but I'm not  
sure that I'm happy with it at this time.

CAPCOM Roger, Houston you went through a key  
hole there and we're still in one, really. At the base of  
what? And

SC If I had it on my water faucet I'd  
clean it off or get a new faucet.

CAPCOM Roger.

SC If I had it in my swimming pool I'd call  
for pool service.

CAPCOM About 30 seconds LOS Redstone at 46.

SC Roger.

CAPCOM Belay that Red, Redstone at 14.

SC Roger, 14.

PAO This is Apollo Control 152 hours, 4  
minutes. Hawaii has LOS. During this pass Walt Cunningham  
reported that the environmental control system redundant  
component check had been completed satisfactorily. We ask  
the crew to give us a taste versus time report on the water  
chlorination and at that time Wally Schirra indicated that  
the - from what we could copy apparently the water is getting  
a brown tinge to it that they are not quite pleased with.  
We attempt to see if we can read that a little bit better on  
some tape. Next station to acquire will be the Redstone at  
152 hours, 14 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1520600 (CDT 6:10P) 475/1

PAO                      This is Apollo Control 152 hours 07 minutes. We have a better handle now on that last report. Wally Schirra reports quote: brown goopy stuff at the base of the chlorine injector. It is not in the water. At the base of the chlorine injector. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1521400 (CDT 6:20P) 476/1

PAO This is Apollo Control 152 hours 14 minutes into the mission. The Redstone has acquired Apollo 7.  
CAPCOM Apollo 7 Houston through Redstone standing by.

SC Roger  
CAPCOM Roger, loud and clear.  
SC (garble) just off Hawaii. We saw a big smoke trail (garble)  
CAPCOM 7 Houston. Say it again.  
SC We saw the smoke trail of a ship at about 7:45 gti.  
CAPCOM Rog.  
SC 7 minutes 45 seconds. Think Gord Cooper will be happy to tell you that one.  
CAPCOM Sure will.  
SC (Garble) in Hawaii and now it's 9 seconds. We're losers on that one.  
CAPCOM Roger.  
SC Haven't seen any track of the Imperial Valley, yet, either.  
CAPCOM Okay.  
SC We'll look for water skiers in Clear Lake this week-end.  
CAPCOM Very good.  
CAPCOM 7 Houston, about 30 seconds LOS. Walt, you might be advised it's the external connectors on the biomed that seem to be acting up.  
SC Did you say the external connectors?  
CAPCOM Affirmative.  
SC Okay, I'll check it over good before I go to bed.  
CAPCOM Roger.  
SC We'll have all of that just to (garble)  
CAPCOM Roger.  
PAO This is Apollo Control 152 hours 19 minutes into the mission. The Redstone has LOS now. Apollo 7 nearing the end of its 96th revolution. During this pass the crew reported seeing a smoke trail of a ship, and remarked that should make Gordon Cooper happy, is a reference to Col. Cooper's Mercury flight, in which he reported seeing smoke at various locations, from ships and trains, and drew some disbelief from people that this was possible. The next station to acquire will be Ascension. 152 hours 40 minutes. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 15240 (CDT 6:45 p) 477/1

PAO This is Apollo control, 152 hours 40 minutes, Ascension has acquired Apollo 7, very low elevation pass nine tenths of a degree, this will be about a two and a half minute pass.

CAPCOM Apollo 7, Houston, through Ascension.

SC Roger, thank you.

CAPCOM Roger, loud and clear.

SC Anything more on the (garble) Ron.

CAPCOM Roger, we're working on some.

SC Okay, anybody Happen to have the Lima-

Sierra update?

CAPCOM Roger, your hydrogen margin is 2.6 pounds now, your O2 margin is 58 pounds, Lima-Sierra 073/061, Sierra-Foxtrot 075, Echo Kilo plus 003.

SC Roger, thank you.

CAPCOM The olympics are getting started tonight sometime, we don't have any information coming in on that yet.

SC Roger.

PAO This is Apollo control 152 hours 44 minutes, Ascension has LOS now and the Mercury will acquire at 153 hours 15 minutes.

END OF TAPE



PAO This is Apollo Control at 153 hours  
46 minutes. Tracking ship Redstone in the South Pacific  
is about to acquire.

CAPCOM ...beta number 17

SC Ready to copy (garble)

CAPCOM Roger, 099-alpha charlie minus

028 minus 0180 155 plus 27 plus 54 4608

SC Say Ron, Can you be working on a  
map update while I'm doing this?

CAPCOM Affirmative. 100-alpha charlie plus

081 minus 0240 157 plus 00 plus 51 4205 101-2charlie plus

205 minus 0239 158 plus 35 plus 56 3799 102-2 alpha plus

276 minus 0270 160 plus 10 plus 26 3594 103- 1 bravo plus

237 minus 0616 161 plus 35 plus 40 37 25 104- 1 alpha plus

297 minus 0627 163 plus 10 plus 40 3533 over.

SC Roger, was 99 alpha charlie the first  
one?

CAPCOM Affirmative.

SC Minus 028 minus 0180 155 plus 27 plus 54

4608 100-alpha charlie plus 081 minus 0240 157 plus 00 plus

51 4205 101 - 2charlie plus 205 minus 0239 158 plus 35 plus 56

3799 102 -2 alpha plus 276 minus 0270 160 plus 10 plus 20

3594 103 - 1 bravo plus 237 minus 0616 161 plus 35 plus 40

3725 104-1 alpha plus 297 minus 0627 163 plus 10 40 3533 over.

CAPCOM Roger in area 102 2 alpha the GETI  
160 plus 10 plus 26.

SC 160 plus 10 plus 26. Standing by for  
the map update.

CAPCOM Roger, Rev. 97 GET 152 plus 53 plus 56  
longitude 31.6 east,

SC Roger.

CAPCOM Apollo 7, Houston the United States  
beat Yugoslavia in basketball today 73 to 58.

SC Roger.

CAPCOM Now, you might be interested the  
stock market is fired by rumors of a possible halt in the  
bombing of North Viet Nam bounded ahead today in third  
highest volume in the exchange history. The volume of  
21.06 million Dow Jones was up 3.60 at 95891.

SC Roger, that's highest on record  
isn't it?

CAPCOM Not quite sure, I don't think so.  
It looks like hurricane Gladys is expected to go ashore in a  
relatively sparsely populated area of Florida.

SC Roger that's good news.

CAPCOM It was also announced today that  
Mrs. John F. Kennedy will marry shipping tycoon Aristotle  
Onassis.

SC Oh my!

APOLLO 7 COMMENTARY, 10/17/68, GET: 1534600 (CDT 7:50p) 480/2

CAPCOM Walt, I have your present battery  
amp per hour if you have a minute.  
SC Roger, go ahead with it.  
CAPCOM Roger, A 30.8, B 28.4, and C is 39.0.  
SC Rog, thank you.  
PAO This is Apollo Control 153 hours  
54 minutes. The Redstone has LOS now. Next station to  
acquire will be Ascension at 154 hours 12 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1541200 (CDT 8:15P) 481/1

PAO This is Apollo Control 154 hours 12 minutes and Ascension is about to acquire Apollo 7.  
CAPCOM Apollo 7 Houston through Ascension  
standing by.  
SC Roger, we're receiving you loud and clear.  
CAPCOM Roger, good morning.  
SC How are you?  
CAPCOM Good shape.  
SC Roger. I'd like to log in 2 aspirin and  
13 clicks of water each for the commander and rev pilot.  
CAPCOM Roger.  
CAPCOM Apollo 7 Houston, opposite OMNI.  
SC Roger.  
CAPCOM 7 Houston, LOS Mercury at 49.  
SC Roger.  
PAO This is Apollo Control 154 hours 20 minutes LOS at Ascension. The command module pilot, Don Eisele, is awake now, and conducted the transmission during that pass. He reported that Wally Schirra and Walt Cunningham each took 2 aspirin before beginning their sleep period at 154 hours. The next station to acquire will be the tracking ship Mercury. At 154 hours 48 minutes, this is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1544800 (CDT 8:50P) 482/1

PAO This is Apollo Control at 154 hours 48 minutes into the mission. Apollo 7 coming up on the tracking ship Mercury, now. Guam has overlapping coverage this pass.

CAPCOM Apollo 7 Houston through Mercury.

SC Houston contact, Mercury contact giving (garble)

CAPCOM Apollo 7 Houston through Mercury, standing by.

SC Roger, Houston, Apollo 7.

CAPCOM Roger, loud and clear.

SC Ron, this Donn. I'd like to register a strong complaint on the lithium hydroxide storage tanks on the floor. That, uh, either A2, I believe is the number. The ones that are under Wally's couch. (Garble) 11 and the lids, it takes a tremendous amount of force to make them close. They're just not suitable at all.

CAPCOM Roger, I understand.

SC They're the new type ones with the rounded corners and the (garble) are great and they come in (garble)

CAPCOM Roger.

CAPCOM Apollo 7 Houston. Opposite OMNI.

CAPCOM Apollo 7 Houston. Request you turn 02 tank 2 fan on for 5 minutes then off.

SC Roger, 02, 2 going on.

CAPCOM Roger.

CAPCOM Apollo 7 Houston 1 minutes LOS Ascension, 2 zero.

SC Apollo 7, Roger.

PAO This is Apollo Control at 155 hours 1 minute. Guam has LOS. Not a lot of conversation during that pass. We're in the period set aside for command module pilot to eat. Donn Eisele had just completed a lithium hydroxide canister change a short time ago. Reported that the stowage location under one of the couches. Apparently it's difficult to remove a fresh canister from that location. The next station to acquire will be the Redstone at 155 hours 20 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET; 1552000 (CDT 9:25p) 483/1

PAO This is Apollo Control at 155 hours  
20 minutes into the mission. Apollo 7 just about within  
the range of the Redstone. We'll stand by for this pass.  
CAPCOM Apollo 7, Houston through Redstone.  
SC Roger, Houston, Apollo 7.  
CAPCOM Roger, loud and clear. Donn, we would  
like to get a run down on your health status and medication,  
sleep and what have you.  
SC Say again.  
CAPCOM Roger, just a little resume of your  
status as cold medication, sleep.  
SC Roger. (garbled) I got 5 hours sleep  
last night which seems like enough, I'm not a bit tired.  
We still have head colds. My ears are starting to clear up  
somewhat, but I still got pretty stuffy sinuses. Wally and  
Walt are still complaining of stopped up ears and head.  
CAPCOM Roger. And we're assuming no medication  
on your part other than reported aspirin.  
SC That's correct. We decided to save  
the actified till last day or so.  
CAPCOM Roger. Now another thing for our  
further flight planning here on your procedures book and the  
control modes, if you could somehow give us a run down. Either  
number them down the page or something like that. And give  
me the numbers you have not completed so we kind of plan  
maybe an RCS fuel.  
SC Okay, Ron. I'll do that a little later.  
I'm trying to eat my breakfast right now.  
CAPCOM Rog, no hurry.  
SC Yeh, I think we've covered most of them,  
one way or another.  
CAPCOM Roger.  
SC I don't know whether, or you know how  
much data got down on the ball, but I think we feed 'em just  
about every control mode.  
CAPCOM Roger. You haven't had any PT for  
breakfast yet have you?  
SC Yeh, I had a little bit here, right now.  
(broken) anyway. You talking about fortified Tang.  
CAPCOM Something like that. Apollo 7, Houston  
opposite OMNI. Apollo 7, Houston, 1 minute till LOS. Ascension  
at 46.  
SC Roger.  
PAO This is Apollo Control, 155 hours  
28 minutes. Apollo 7 beyond the range of the Redstone. We  
got a health summary from Don Eisele that time. Reported he

APOLLO 7 COMMENTARY, 10/17/68, GET: 1551000 (CDT 9:25p) 483/2

had about 5 hours sleep last night, but he believes that was enough because he is not tired. Says he still has a head cold, but that his ears have cleared some, that his sinus stuffy. The other crewmen, Wally Schirra, Walt Cunningham still complain some about their ears. He has taken no medication other than aspirin. And he was completing his breakfast as we came across the Redstone there. The next station to acquire will be Ascension at 155 hours 46 minutes. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET; 1554600 (CDT 9:50P) 484/1

PAO This is Apollo Control 155 hours 46 minutes into the mission. Apollo 7 in it's 99th revolution now about to tag up at Ascension.

CAPCOM Apollo 7 Houston through Ascension.

CAPCOM Apollo 7 Houston, Ascension standing by.

CAPCOM Apollo 7 Houston, 2 minutes to LOS Mercury at two two.

SC Roger. (Static)

CAPCOM Houston, go.

CAPCOM Apollo 7 Houston, say it again.

SC Oh it was nothing, I was just acknowledging.

CAPCOM Oh, Roger, sorry.

CAPCOM Apollo 7 Houston. We've lost your biomed now.

SC Roger. Biomed was disconnected temporarily.

CAPCOM Roger.

CAPCOM Apollo 7 Houston, verify 02 tank 2 fan

off.

PAO This is Apollo Control 155 hours 54 minutes. Ascension has LOS. Apollo 7 about 10 minutes away from sunrise on this rev. Next station to acquire will be the tracking ship Mercury, at 156 hours 22 minutes. The Mercury is experiencing heavy seas and may have some trouble tracking with its antenna. These heavy seas caused by tropical storm, Gloria in that area. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1562200 (CDT: 10;30p)485/1

PAO This is Apollo Control at 156 hours and 22 minutes and Apollo 7 is approaching acquisition at the Mercury. Guam has overlapping coverage on this rev.

CAPCOM Apollo 7 Houston through Mercury, standing by.

SC Roger, we standing by.

CAPCOM Roger, you're loud and clear. Say, Donn we've got some more gold medal winners.

SC Great, who are they?

CAPCOM Roger, in swimming the U.S.A set a new record in the men's 400 meter free style relay in 331.7. Also the U.S. women won the 400 meter medley relay in 428.3. That gives us a total of 17 gold medals so far.

SC Sounds pretty good. Great.

CAPCOM Apollo 7 Houston, opposite omni. Seven Houston we plan to run through program five over Redstone and power down again over the Canaries, this pass.

SC Okay

CAPCOM Apollo 7 Houston, you ought to be right over typhoon Gloria at this time.

SC Okay, thank you, I was looking for it. Gee, I think I see it, Ron, its just a big mass of white clouds just underneath me but I can't get a shot at it, we are not at the right angle.

CAPCOM Roger.

SC Couldn't discern a particular pattern like we could on hurricane Gladys. Where is Gladys now anyway?

CAPCOM Its just about to hit the Florida Coast down there kinda West of Tallahassee, I think.

SC Oh.

CAPCOM Apollo 7 Houston about one minute LOS Redstone at 54.

SC Okay

CAPCOM Hey, Donn, just out of curiosity, were you testing the tissues between Redstone and Ascension on the last pass.

SC Was I testing what?

CAPCOM The tissues.

SC Tissues, no, I was taking a bath, as a matter of fact.

CAPCOM Okay.

SC Hello Houston, Apollo 7.

CAPCOM Houston, Go.

SC Would like to advise that the tissues have been tested with a reasonable degree of success.

CAPCOM Roger.

PAO This is Apollo Control at 156 hours, 34

APOLLO 7 COMMENTARY, 10/17/68, GET: 1562200 (CDT 10:30p) 485/2

minutes. Guam has LOS now. During this pass Donn Eisele reported seeing what he believes to be typhoon Gloria but reported that there was no discernable pattern that he could see on hurricane Gladys in the Gulf of Mexico. Redstone will acquire at 156 hours, 54 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 1565400 (CDT 11:00p) 486/1

PAO This is Apollo Control at 156 hours  
54 minutes into the mission. Apollo 7 coming within range  
of the Redstone just at sunset on the 99th revolution. We'll  
stand by.

CAPCOM Apollo 7, Houston through Redstone.

SC Roger, Houston, Apollo 7.

CAPCOM Roger, loud and clear.

SC Okay.

CAPCOM Apollo 7, Houston. We're ready for

GNC power up.

SC Okay.

CAPCOM Apollo 7, Houston. Is the urine dump  
heater still in main A, and have you been cycling it at all?

SC Roger, main A, we haven't touched it  
that I know of since we took off.

CAPCOM Roger. Apollo 7, Houston opposite  
OMNI. Apollo 7, Houston, LOS. Canary's at 25.

SC Roger, Ron.

PAO This is Apollo Control at 157 hours  
2 minutes. Redstone has LOS. In approximately 5 minutes  
Apollo 7 will begin its 100th revolution of the Earth. The  
next station to acquire will be the Canary Islands station  
at 157 hours 25 minutes. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/17/68, GET: 15800 (CDT 11:27p) 487/1

PAO This is Apollo Control 157 hours 25 minutes into the mission of Apollo 7. We're now at the point of acquisition, the Canary Island tracking station, let's listen in.

CAP COM Apollo 7, Houston through Canaries standing by. (pause) Apollo 7, Houston at Canary. Apollo 7 Houston. Canary M&O, Houston Cap Com, are we getting through to you?

SC Say again.

CAP COM Rog, Apollo 7, Houston, we'll go on CMC power down.

SC Okay.

CAP COM Apollo 7, Houston, one minute LOS Redstone at 28 and you're in your 100th rev.

SC Oh, roger.

PAO This is Apollo Control 157 hours 30 minutes into the mission of Apollo 7. We have just lost acquisition with the Canary Islands tracking station. Apollo 7 is just ending a night pass, starting off on its 100th revolution around the Earth. We are anticipating Redstone tracking ship at 158 hours 28 minutes. That's about one hour from now. At 157:31 this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 15828 (CDT 12:30a) 488/1

PAO Eight minutes into the mission of Apollo 7. It's been about one hour since the last communication with Apollo 7. We're now approaching the Redstone tracking ship and we're just beginning a night pass and let's join the conversation.

CAP COM Apollo 7, Houston, opposite omni.  
Apollo 7, Houston.

SC Roger, go ahead Bill.  
CAP COM Hello, Donn, I though maybe you weren't reading me. I have a flight plan update when you're ready to copy.

SC Okay, stand by. (pause) Go, ahead,  
Bill.

CAP COM Rog. If you'll look at page 2 dash 54 at 160 hours + 25 delete the fuel cell purge.

SC Roger.

CAP COM At 161 + 10 DAP update.

SC Okay.

CAP COM 162 + 30 waste water dump. At 163 + 40 fuel cell O2 purge.

SC Roger. Fuel cell O2 purge at 163 + 40.

CAP COM Affirmative and if you'll look on the next page 2 dash 55, I have a few items there relative to the burn.

SC Okay, go ahead.

CAP COM Right. The nominal time now for burn five is 165 hours even. It'll be quads Bravo and Delta for the two jet ullage, MTVC for the last 30 seconds, the burn time will be 66 seconds and you can delete the reference to battery charging there.

SC Okay, got quads B&D, 165 on the hour, two jet ullage and the burn time is one minute and six seconds. Is that right?

CAP COM Affirmative and delete the reference to battery charging.

SC Okay. Guess the Delta V changed some then too didn't it?

CAP COM We'll be updating that, and also there -

SC Okay.

CAP COM The MTVC's will last 30 seconds.

SC Alright.

CAP COM Okay, that does it.

SC Okay.

CAP COM Ah, Donn, just for your information, the total Delta V for that burn is 1646. It'll be on the pad when we send it up.

SC Okay.

CAP COM Apollo 7, Houston one minute LOS

APOLLO 7 COMMENTARY, 10/18/68, GET: 15828 (CDT 12:30a) 488/2

CAP COM

Redstone, Antigua at 49.

SC

Roger, Antigua at 49.

PAO

This is Apollo Control 158 hours 36 minutes into the mission of Apollo 7. We are losing acquisition at the Redstone tracking ship. During this pass we had a flight plan update for the next several hours through the fifth service propulsion system burn. The change in that burn is that it will be 66 seconds in duration instead of 60.9 seconds according to the flight plan. Flight plan also had a Delta V, or velocity, change of 1465.4 feet-per-second now it's indicated that the Delta V velocity change will be 1646. The burn will take place at 165 hours into the mission. We are ending up our 100th revolution of the Earth at 158 hours 37 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 15849 (CDT 12:52a) 489/1

PAO This is Apollo Control 158 hours 49 minutes into the mission of Apollo 7. We're coming up now to the acquisition point for Antigua. Let's listen in.

CAP COM

Apollo 7, Houston through Antigua.

PAO This is Apollo Control 158:52 into the flight. We have just lost acquisition with Antigua. The next point will be in some six minutes with the Canary Islands. We're beginning our 101st revolution of the Earth at this point and we'll come up on Canary Islands at 158:57. This is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 15857 (CDT 1:02a) 490/1

PAO This is Apollo Control 158 hours 57 minutes into the mission of Apollo 7. The last hour and one half we've had a very quiet spacecraft with the exception of a flight plan update that was passed to them about an hour ago. Now we're coming up on acquisition with Canary Islands tracking station, let's listen in.

CAP COM Apollo 7, Houston through Canary.  
Apollo 7, Houston through Canary. Apollo 7, Houston.

SC Roger, go.

CAP COM Rog, just checking. Now, it's going to be about an hour here, see ah -

SC ...

CAP COM Rog, it's going to be about 45 minutes before next acquisition. I just wanted to get a call from you before we had LOS here at Canary.

SC Yeah, okay fine. Everything's fine here.

CAP COM Good, thank you.

SC I've got two sleeping beauties and a sound ship.

CAP COM Rog. Donn, how was your sleep last night?

SC Oh, it was pretty good. Not quite as good as the night before.

CAP COM Rog. (pause) We have estimated acquisition Honeysuckle at 43, we'll need the S-band volume up however its sort of a freakish pass. If we don't get you there we'll get you at the Redstone on the hour and that will be about an hour from now.

SC Okay.

pao This is Apollo Control 159 hours 05 minutes into the mission of Apollo 7. That's 6 days 15 hours and 05 minutes. We've lost acquisition with the Canary Island tracking station. Our next point of contact will be Honeysuckle Creek at 159 hours 43 minutes. During this pass Astronaut Pogue here in the Control Center had a communication check. Astronaut Eisele indicated that he was - everything was fine on the spacecraft and that he had two sleeping beauties and a sound ship. At 159 hours 06 minutes into the mission of Apollo 7, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 15943 (CDT 1:47a) 491/1

PAO This is Apollo Control 159 hours 43 minutes into the mission of Apollo 7. We're coming up now on a pass at Honeysuckle Creek in Australia. It'll be a short pass but stand by.

CAP COM Apollo 7, Houston through Honeysuckle, poor contact.

PAO This is Apollo Control 159 hours 47 minutes into the mission. You heard Cap Com Pogue here at the Control Center indicate that it was a poor contact at Honeysuckle. Our next contact will be with the Redstone tracking station, excuse me, the Redstone tracking ship 160 hours and one minute. At 159:48, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16001 (CDT 2:04a) 492/1

PAO This is Apollo Control 160 hours one minute into the flight of Apollo 7. We're coming up now on the Redstone tracking ship. We've entered a nightside pass, just had acquisition, let's listen in.

CAP COM Apollo 7, Houston through Redstone.

SC Roger, Houston, Apollo 7.

CAP COM Say, Donn, this waste water quantity is getting up pretty high and we've been taking a look at this, ah, it probably would be a good idea perhaps to dump this stuff before you do a nav sighting, well before.

SC Yeah, that's a good idea. Thanks,

Bill.

CAP COM And go ahead and do it anytime I suppose. Also, when I was updating the flight plan, if you have it there you'll notice there's still an H2 heaters On at 160 hours and five minutes and of course I should have had that deleted.

SC Rog, I got that.

CAP COM And, one additional item to catch up on and thats this fuel cell O2 purge at 163:40. This should be done after the Delta V bias test.

SC Oh, okay.

CAP COM Thank you. Apollo 7, Houston opposite omni.

SC Roger. (pause) Houston, Apollo 7.

CAP COM Go.

SC Roger. I was just looking ahead. This ... thermal control BPO.

CAP COM Rog.

SC I'm wondering if we follow the procedures thats outlined if we're not going to put ourself in that undesirable situation where we're pointed straight up or nearly so in the lower part of our trajectory and I'm wondering if it might not be better to simply specify the time in which they want the rolling, you know with the ... to begin and let us simply ... few minutes ahead and then C spelling pitch and yaw at the designated time.

CAP COM Okay, Donn, stand by and we'll get that -

SC ... their tight net band for oh about 20 minutes before we disable pitch and yaw and our experience so far indicates that we can do a better job manually ... these pitch and yaw range anyway,

CAP COM Rog, we've copied that and we'll take a good look at that.

SC Okay. I'm afraid if we do it the way its outlined I think would cost us a fair amount of fuel and ... as well.

APOLLO 7 COMMENTARY, 10/18/68, GET: 16001 (CDT 2:04a) 492/2

CAP COM Rog. (pause) Ah, Donn, your waste water quantity right now is reading about 88 percent.

SC Roger, Bill. I think I'll go ahead and dump it now.

CAP COM Right, thank you. (pause) Apollo 7, Houston one minute LOS Redstone. Antigua at 20.

SC Roger.

PAO This is Apollo Control 160 hours 10 minutes into the mission of Apollo 7. We are losing acquisition with the Redstone tracking ship. Our next acquiring point will be at Antigua at 160 hours 20 minutes, 10 minutes from now. With a little less than 100 hours to go in the mission, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16020 (CDT 2:23a) 493/1

PAO This is Apollo Control 160 hours 20 minutes into the mission of Apollo 7. We're just coming up now on Antigua and just had acquisition; let's listen in.

CAP COM Apollo 7, Houston through Antigua.

SC Roger, Houston, Apollo 7.

CAP COM Rog.

SC Houston, log me ... clicks on the water gun.

CAP COM Say again the number.

SC One two.

CAP COM Roger, one two. (pause) Apollo 7, Houston, opposite omni.

SC Roger.

CAP COM Ah, Donn, we show you down about 53 percent on the waste water and just bring her right on down to 25 percent.

SC Okay fine. Help me keep an eye on it. Bill, I think I'm going to power up the CMC, the IMU and everything prior to the next night pass. ... the heavier, the burn time now occurs during the nightpass which effectively wipes it out as a trying to do an alignment so I'm going to have to start a little early.

CAP COM Okay. (pause) Apollo 7, Houston, we will need to send you an update over Carnarvon or Honeysuckle and that's at about 161 + 20 nominally, maybe 161:10.

SC Okay. Okay, I'll go ahead and power up everything at 161.

CAP COM Okay.

SC Houston, Apollo --

CAP COM Apollo 7, Houston, go.

SC Roger, could you give me a map update please?

CAP COM Rog, stand by. Apollo 7, Houston, map update for rev. 101, GET 158 + 48 + 46, NODE at 59.3 West, five niner point three west.

SC Roger, thank you.

CAP COM And, we're coming up on LOS Antigua we'll pick you up at Canaries in about 3 minutes.

SC Okay.

PAO This is Apollo Control 160 hours 28 minutes into the mission of Apollo 7. Apollo 7 has started on its 102nd revolution of Earth, the next acquisition point will be the Canary Islands at 160 hours 31 minutes. At 160:28 this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16032 (CDT 2:33a) 494/1

PAO This is Apollo Control 160 hours 31 minutes into the mission of Apollo 7. We're coming up on acquisition with Canary Islands just acquired, we'll stand by.

CAP COM Apollo 7, Houston through Canary.

SC Rog. -

CAP COM Apollo 7, Houston.

SC Roger.

CAP COM Alright, Donn, I'll be giving you a DAP, ah or send - ah, yes, giving you a DAP pad and also a maneuver pad at Carnarvon. That will be about 161 + 10 and I'll have a P-27 pad standing by. Having a little trouble with our uplink at Carnarvon, but, that's what we'll be doing when we come up on Australia.

SC Okay. I want to try and get a few pictures of Australia, too.

CAP COM Okay. (pause) Hey, Donn, are you exercising?

SC No, I'm soaking up the water that leaks around us. (garbled)

CAP COM Okay, that answers the question. Our friendly doctor noticed that you must be scurrying around there.

SC Yeah, I am. Everytime we dump waste water ... .. leaks out around ...

CAP COM Yeah.

SC (garbled) (garbled)

CAP COM Yeah, must be quite a nuisance.

SC Yes. ... do it very often.

CAP COM Apollo 7, Houston, one minute LOS Canaries, I'm going to give you a call in a couple of minutes at AOS Madrid just to check the S-band, so we need the volume up. Apollo 7, Houston, S-band volume up.

PAO This is Apollo Control 160 hours 39 minutes into the mission of Apollo 7. We have just lost acquisition at Canary Islands and we have about one minute to go on the S-band Madrid acquisition. There will be no further conversation until we get to Carnarvon at 161:07. At 160:40 this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 161 hours, 7 minutes into the mission of Apollo 7. We're coming upon acquisition with a rather long pass, Carnarvon which has almost a 6 minute pass and then about a minute delay into Honeysuckle Creek for another 5 or 6 minute pass. We will stay up for all of the 12 or 14 minutes. Let's listen in.

CAPCOM Maneuver path, and if you'll go to pull and accept we'll send up your new state vector.

SC Roger, going to accept.

CAPCOM Okay, now Don, I have the dap data update course is brief, and the maneuver path will take a little while. You mentioned that you wanted to get some pictures over Australia so - sorta - you might take a look at that and either delay your readback or ask me to delay in sending it to you.

SC Go ahead, Bill.

CAPCOM Ready to copy?

SC All right, I got you. Why don't you give me the DAP data?

CAPCOM Okay, DAP data, minus 00078 minus 004 niner, plus 02142. Read back.

SC Minus 00078 minus 0049, plus 02142.

CAPCOM Readback is correct. I'm ready to give you the maneuver path when you're ready.

SC Okay, I think I'll hold out until I get some pictures.

CAPCOM Just let me know when you're ready to copy. And if we run to LOS of Carnarvon be sure to turn your volume up before Honeysuckle. We'll have Honeysuckle acquisition at about 15.

SC Okay.

CAPCOM Apollo 7, Houston. No need to acknowledge right now but you've got a GO for a 121-1.

SC Roger, thank you.

CAPCOM Apollo 7, Houston, you might check your attitude right now.

SC I hear you, Roger.

CAPCOM And we're coming upon LOS Carnarvon in about 45 seconds, S-Band volume up at 15.

SC Roger.

CAPCOM Apollo 7, Houston. Apollo 7, Houston, through Honeysuckle.

CAPCOM This is Honeysuckle on (garble)

CAPCOM Apollo 7, Houston, through Honeysuckle.

SC Houston, Apollo 7.

CAPCOM Roger, how do you read, Don?

SC Oh, loud and clear.

CAPCOM Okay, let me know when you're ready to copy the maneuver path and also with the previous DAP data

APOLLO 7 COMMENTARY, 10/18/68, GET: 16108 (CDF 3:13) 495/2

CAPCOM update that was for noun 48.  
SC Roger, understand.  
CAPCOM And let me know when you're ready to copy the maneuver path.  
SC Okay. You can go ahead now.  
CAPCOM Roger, and before I start your state vectoring and target loads RN. Starting to read for SPS 5/ plus 165000000 plus 01110 plus 16300 plus 02034, 2406 plus 08 niner 8 17280 2 niner 4 niner 4, minus 078 minus 049106 343548201, 164180000, minus 3062, plus 11248 123 niner, 000000000. Standby for readback.  
SC Roger SPS 5/plugs 165000000 plus 01110 plus 16300, plus 02034, 2406 plus 0898 17280 29494, minus 078 minus 049106 343548201, 164180000, minus 3062, plus 11248 1239, 000000000. And hold off for attitude.  
CAPCOM Roger, and for the attitude it's out of plane, south heads up. It now checks - standby - comments MTVC take over at TEG plus 3/6 seconds. Additional comment, manual cutoff at Delta-V counter equal 100 feet per second. Sextant star not visible after 164 plus 41. Also if needed, your RP and wire line are 171260014.  
SC Say, that moved a little to the right. What were those numbers against a - back the image.  
CAPCOM ROLL - ROLL is 171, pitch is 260, YAW 014.  
PAO This is Apollo Control, 161 hours, 22 minutes into the mission of Apollo 7. We have passed out of acquisition with Honeysuckle Creek in Australia. We will acquire at Redstone Tracking Ship for a short pass at 161 hours, 37 minutes. You just heard an update, a DAP update which is digital auto pilot. Also, the SPS number 5 PUGS update, PUGS standing for propellant utilization and gauging system update. For the service propulsion system engine burn which will occur at 165 hours, ground elapsed time. At 16123, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16137 (CDT 3:40a) 496/1

PAO This is Apollo Control 161 hours 37 minutes into the mission of Apollo 7. We are approaching the Redstone tracking ship and should have acquisition shortly. Let's listen in.

CAP COM Apollo 7, Houston through Redstone.

SC Roger, Bill.

CAP COM Rog, I'd like to clarify one item in the comments regarding the bias, the manual cutoff at Delta V counter equalled 100 feet-per-second. I read it as one zero zero and just wanted to make sure that you understood there's not a decimal point there.

SC Roger, I get 'cha. You've deliberately loaded in a bigger number and we cut off at a plus number manually by throwing the switch down, right?

CAP COM That's affirmative but it's one hundred and not ten.

SC Right, I've got 'cha.

CAP COM Also, you did get the RP and Y align.

SC Rog, I'll get that a little later. I'll bring ... in here.

CAP COM Okay, sorry to have bothered you.

SC No sweat. I plan to align this thing without mapping out the range boy it's really wheeling around.

CAP COM Apollo 7, Houston one minute LOS. When it's convenient you can go to block on your TM.

SC Roger.

PAO This is Apollo Control 161 hours 41 minutes into the mission of Apollo 7. In about 15 seconds we'll have loss of signal at the Redstone tracking ship. We're in the 102nd revolution, coming to the end of it. We'll be starting very shortly in the 103rd revolution. Our next point of contact will be MILA, that's Merritt Island, Florida at 161 hours 52 minutes. At 161:42 this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16152 (CDT 3:55a) 497/1

PAO This is Apollo Control 161 hours 52 minutes into the mission of Apollo 7. We're acquiring now at the Merritt Island facility, let's listen in.

SC Bill, ah, (garbled) while you were talking there I noticed a P-51 and then do the P-30 ... P-40 and I've got a P-52 alignment, I'd like to go through that at least one more time while ... nightpass but as of right now we're in pretty good shape on alignments.

CAP COM Bill, I got the word that they took a look at the numbers over Redstone and they looked very favorable.

SC You mean the numbers on the computer?

CAP COM Rog.

SC Very good.

CAP COM Also, I would like to check one thing if you'll get the maneuver pad.

SC Got it right here.

CAP COM Roger, the trunion is two zero one.

SC (garbled)

CAP COM You read it back I'm pretty sure you read it correctly, I just wanted to confirm, it sounded - I wasn't too sure about the first number and so that's about two thirds of the way down the pad there, two zero one for the trunion.

SC Oh, yeah. (garbled) star alignments.

CAP COM Would you say that again, please?

SC ... back up alignment that was ...

CAP COM Oh, yeah, well I just sent those up because this was an important burn and it was 171 260 and 014 for the roll, pitch and yaw align.

SC Okay, thank you. (garbled) at the last minute, I don't think it will happen, but,

CAP COM Okay.

SC What I gotta watch out for now is the fact we're lined up out of plane and this thing likes to fly in plane.

SC Rog.  
CAP COM Apollo 7, Houston, we still show you in accept.

SC Roger, thank you.  
CAP COM Also, Donn, I have a block data to read up, your probably coming out of nighttime now and to keep from having to give this to you over Carnarvon, you'll be coming up on a nighttime pass, I'd like to get that to you as soon as possible and then leave you free to use as much of the nighttime as possible on the next nighttime pass.

SC Ah, good thinking, I'll get the block data out. (pause) -Go ahead with your block, Bill.

APOLLO 7 COMMENTARY, 10/18/68, GET: 16152 (CDT 3:55a) 497/2

CAP COM Rog, before I start I'd like to verify  
you have loaded the DAT with the DAT data update I gave you?

SC That's right.

CAP COM Roger, okay, starting to read block  
data. 105 dash 1 alpha +314 -0627 164 46 06 3446, 106 dash  
1 alpha +286 -0631 166 21 55 3485, 107 dash 4 alpha +283  
-1625 168 59 03 3038, 108 dash 4 alpha +302 -1625 170 40 38  
2787, 109 dash 4 alpha +275 -1625 172 22 48 3072, 110 dash  
3 alpha +299 +1390 173 34 54 2890. Standing by for read-  
back.

SC Roger 105 dash 1 alpha +314 -0627 164  
46 06 3446, 106 dash 1 alpha +286 -0631 166 21 55 3485, 107  
dash 4 alpha +283 -1625 168 59 03 3038, 108 dash 4 alpha  
+302 -1625 170 40 38 2787, 109 dash 4 alpha +275 -1625 172  
22 48 3072, 110 dash 3 alpha +299 +1390 173 34 54 2890.

CAP COM Roger, readback correct. Coming up on  
LOS, we'll have Canaries at 05.

PAO This is Apollo Control 162 hours 02 min-  
utes into the mission. We have about a two and one-half  
minute wait for Canary Island acquisition. At 162:02 this  
is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16205 (CDT 4:04) 498/1

PAO This is Apollo Control, 162 hours,  
5 minutes into the mission of Apollo 7. We're coming upon  
acquisition point with Canary Islands now. Let's listen in.  
CAPCOM Apollo 7, Houston, through Canary.  
SC Roger.  
CAPCOM Donn, you might be interested - the S-IVB  
is just a bit ahead of you at about 400K - on the east coast  
of Africa.  
SC Oh, yeah?  
CAPCOM It's coming in.  
SC Oh, it's coming in? Besides you'll  
speak to us. Houston, Apollo 7.  
CAPCOM Go.  
SC I think you need to give us a little  
advice along the way - on these RCS quads - I'm going to  
switch them. I've already switched C and I suspect A is  
getting down in that direction, perhaps B & D also.  
CAPCOM Roger, standby.  
SC I don't want to switch them until we  
have to but I'd like you to help out.  
CAPCOM Okay. Apollo 7, Houston, you're riding  
comfortable above BRAVO and DELTA. You're getting fairly  
close to A, about 5 to 6 pounds above and we'll keep you  
advised on that just like we did on CHARLIE quad.  
SC All right, thank you.  
CAPCOM Roger, and you might check attitude  
there again.  
SC Roger, it's getting close. I'll try  
not to fire any thrusters.  
CAPCOM Apollo 7, Houston, we're about 1 minute  
and 1/2 here until LOS. And we're transmitting through  
S-Band. How do you read?  
SC I read you fine, Bill.  
CAPCOM Okay, good, thank you.  
SC Houston, Apollo 7.  
CAPCOM Go.  
SC Roger. Did you find out exactly how  
many frames we have in this set...set camera pack? There  
are a nominal number like something like 165. I'm sure it  
has more than that. I just wondered if anybody knew - any-  
body down there knows how many.  
CAPCOM I'll check, I'll try and get the word  
to you but we're coming upon LOS.  
SC Well, whatever is convenient - know  
the rest of it.  
CAPCOM We're checking. Apollo 7, Houston,  
we'll have Canarvon at 40.  
PAO This is Apollo Control, 162 hours,  
13 minutes into the mission. We've just had lost of signal

APOLLO 7 COMMENTARY, 10/17/68, GET: 16205 (CDT 4:04) 498/2

PAO at Canary Islands. Our next point of contact will be Canarvon at 162 hours, 40 minutes. During this pass, CAPCOM Pogue here in the Control center indicated to astronaut Eisele in the spacecraft that the S-IVB stage of the Saturn booster was ahead of the command and service module off the coast of Africa at about 400,000 feet. The S-IVB is due to reenter at approximately 166 hours into the mission. Eisele made the comment that as near as we could hear - Adios, Big Brute. Eisele is keeping watch on the spacecraft attitude and he says he will try and not fire any thrusters to keep it - to keep it within limits. At 162 hours, 15 minutes into the mission of Apollo 7, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16240 (CDT 4:42a) 499/1

PAO This is Apollo Control 162 hours 40 minutes into the mission of Apollo 7. We're now coming up on Carnarvon tracking station and our 103rd revolution. We should have acquisition in a very few seconds, let's join in.

CAP COM Apollo 7, Houston through Carnarvon.  
SC Roger, Houston this is Apollo 7.  
CAP COM Rog, say in reference to the passive thermal control test, we would still like to perform the test as per the procedure. A couple points of clarification, the time of initiation is selected to get MAX time above 200 miles with channels as able, also the time to initiate attitude hold is 10 minutes past perigee so we shouldn't have too much of a problem there on the drag.

SC Okay, if you say so. We'll give it a whirl, if it's too bad we'll probably have to modify a little bit going up.

CAP COM Okay and in that regard, there'll be two more of those tests they say if this is too expensive in fuel that we can just take a look at one of the two other tests that are coming up. We may just scrap one of those.

SC ... suggest that if we get good results out of the first one.

CAP COM Well, they don't anticipate too much of a problem but we'll just adopt a wait and see attitude on that one.

SC Roger, understand.  
CAP COM Also, in reference to your question on the Cassettes..., I've checked into this and there are 165 frames MAX in there and I asked them if it kept cranking what happened, apparently it just keeps turning so your not taking anymore pictures after that.

SC Oh, Bill, you've got to be kidding.  
Well, okay, thank you for the dope.

CAP COM Also, just for your information on your pass over the States after the burn you will be visible over Houston.

SC Roger, understand.  
CAP COM Just before sunrise. I'm sorry, Donn, that's before the burn.

SC Roger, understand.  
CAP COM Say, Donn, how did the EMS Delta V test work out?

SC We haven't done that yet, Bill.

CAP COM Okay.  
SC Houston, Apollo 7.

CAP COM Rog, go.  
SC Roger, just got a picture of Carnarvon.

APOLLO 7 COMMENTARY, 10/18/68, GET: 16240 (CDT 4:42a) 499/2

CAP COM Good. (pause) Apollo 7, Houston. O2 tank two fans ON three minutes then OFF. Apollo 7, Houston. Did you copy me on the O2 tank two fans.

SC Roger, Bill.

CAP COM Okay, and in about two minutes we'll have LOS Carnarvon and we'll require S-band volume up for Honeysuckle.

SC Roger, understand Bill and we just took three pictures frames 3, 4, and 5 on magazine R of ...pay Carnarvon and a terrain feature in Australia.

CAP COM Okay. (pause) Apollo 7, Houston. Apollo 7, Houston.

SC Hello, Houston, Apollo 7.

CAP COM Rog, I've just been advised we're monitoring your condenser temperature on fuel cell number two at 174 degrees, this is 10 degrees higher than the other, there is a limit of 176 for an alarm indication so you may get a light on that but we are watching it and there is no cause for undue concern now.

SC Roger, you say if it goes up to 176 not to sweat it,

CAP COM Rog, you get a light.

SC Right, I know but we don't have to get excited about that?

CAP COM Rog.

SC Okay.

END OF TAPE

CAPCOM Apollo 7, Houston, 1 minute LOS Honey-  
suckle, Wymas at 20.

SC

Roger.

PAO

This is Apollo Control, 162 hours, 56 minutes into the mission of Apollo 7. We have just lost acquisition at Honeysuckle and we will be coming upon Guaymas, Mexico Tracking Station at 163 hours, 20 minutes, toward the end of the one hundred third revolution. During this pass we heard CAPCOM Pogue talk first of all about the camera onboard. The question Eisele had asked him of how many frames were in the camera. And Pogue indicated in this pass that there were 165 useable frames, total frames in the camera and after that it just kept clicking and there was no way to tell that there no more frames left. Eisele had a reply to that which was "Oh no, you gotta be kidding", which probably indicated that he did not realize that. Eisele indicated he just got a picture of Canarvon and later indicated that he took three pictures of Carnarvon and terrain feature pictures of Australia. Pogue indicated that our ground readouts and the control center show the fuel cell number two condenser temperature at 174 degrees. He also indicated that if it went to 176 degrees, the alarm indication light will go on and not to sweat it. There was no reason for concern. In that fuel cell process, the hydrogen pump - provides a continuous circulation of hydrogen in the primary loop. And it withdraws water vapor and heat from the cell stacks. The - then the primary bypass valve regulates the flow through the hydrogen which is called the regenerator and takes exhaust heat to the incoming hydrogen gas as it is required to maintain the proper cell temperature. The exhaust gas flows to the condenser where the waste heats transfer to the glycol and the result temperature decrease liquifies some of the water vapor. It's this condenser that he was refering to when he indicated that it was now reading 174 degrees. At 162 hours, 59 minutes into the mission, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16320 (CDT 5:23a) 501/1

PAO This is Apollo Control 163 hours 20 minutes into the mission of Apollo 7. We're now coming up on acquisition for Guaymas, Mexico, we should have it in a few seconds. The astronauts should all be up now and in an eating period, let's stand by for conversation.

CAP COM Apollo 7, Houston through Guaymas.

SC Roger, Houston, Good morning Bill.

CAP COM Good morning, how are you today?

SC Not bad. Say, I wonder if you could give me a readout on my fuel cell radiator two inlet and outlet test please. Give me the trend for the last several hours.

CAP COM Roger. We're doing that very thing right now.

SC We do have a partial warning light on and it's reading about 177 or 178 on the condenser exhaust, the skip temperature has crept on up to about 435.

CAP COM Roger, our last reading on the fuel cell was 174 and that was at 48 over Carnarvon.

SC Roger, I'm wondering about if we get that trend, ah, I'm sure you think its probably a cooler pump failure also. The other question I have is should we give some thought to open circuiting the fuel cell now and throwing it on, letting it cool down a bit, putting it on just before the burn.

CAP COM That's exactly our line of thinking. We'll get back to you on that just as soon as we take a closer look at the data here.

SC Okay.

CAP COM Apollo 7, Houston.

SC Go ahead, Bill.

CAP COM Rog, in regard to your first request, we're still working on your trend. I told them to go back about two orbits. We suggest you open circuit, the fuel cell and put it back on line at 164 + 45. That's 15 minutes prior to the burn. Two fuel cells can handle the loads, however, the buss voltage is going to be about 26.5 to 26.6.

SC Rog. I concur, say again the time for putting them back on.

CAP COM At 164 + 45, that's 15 minutes prior to the burn.

SC Yeah. (pause) Got a morning report for you Bill.

CAP COM Okay.

SC Partial pressure O2 still 245 millimeters mercury so it looks like its holding there. I'll knock off giving you those readings anymore, I might take one the last morning. LMT 15 clicks of water this morning. I had 6-1/2

APOLLO 7 COMMENTARY, 10/18/68, GET: 16320 (CDT 5:23a) 501/2

SC maybe 7 hours of sleep. ... 4-1/2 hours of sleep last night.

CAP COM Rog, understand LMP 15 clicks of water, 6-1/2 to 7 hours of sleep and the CDR 4-1/2 hours of good sleep. Also, Walt you can turn the cryo O2 tanks, ah tank fans OFF, ah, tank two fans OFF.

SC They're OFF. Been off awhile.

CAP COM Thank you.

SC Good morning, Bill.

CAP COM Good morning, Wally. How's everything?

SC Very good. Haven't heard you in awhile.

CAP COM No, I've been on the OFF period here I guess.

SC Yeah, they try to move us up earlier each day.

CAP COM Right.

SC Understand your a big TV fan of ours.

CAP COM That's right. I've been running home from work just in time to watch.

SC Thought for today we were going to try for an Emmy for the best weekly series.

CAP COM I thought you were going to try for a Hammy.

SC Maybe.

CAP COM Right.

SC Oh, you're coming back. I lost it.

CAP COM (laughing) That's a rare one.

SC That makes up for the involuntary Oh Boy you gave us anyway.

CAP COM Rog. (pause) Apollo 7, Houston. At the risk of laboring the point, we'd like to confirm O2 tank two fans OFF and heaters AUTO.

SC Fans are OFF and the - I have one heater here ON was that called for ON during the night?

CAP COM Negative, that should be -

SC Okay, the fan is OFF.

CAP COM Okay, for O2 tank two the fans should be OFF and the heater in AUTO.

SC Rog, understand. I'm going to turn the fan on for five minutes. I had it off here. Looks like we may have had a heater ... ON instead of AUTO.

CAP COM Okay. (pause) Apollo 7, Houston.

SC Go ahead, Bill.

CAP COM Rog, you might tell Donn apparently hes trying to load that noun 48 there and having trouble in register two. He's putting in a minus 49 and when he's checking it its coming back a 50, they say that's because of scaling into and out from.

APOLLO 7 COMMENTARY, 10/18/68, GET: 16320 (CDT 5:23a) 501/3

SC Rog, I was having fun with that. If you put in a 49 it adds one and if you put in a 48 it subtracts one. There's no way to get 49 on there.

CAP COM They say that when you put the 49 in and enter it, it's okay.

SC Yeah, it's all right.

CAP COM Okay.

SC I was just having fun with it. (pause)  
Hey, Bill, notice how quickly that exhaust temperature is coming down.

CAP COM Yeah, it's coming right down.

SC Hey, Bill, I'm thinking of manually balancing the hydrogen tanks right after the burn.

CAP COM Okay.

SC I'd like to have what you guys read out 'as quantities in H2 one and H2 two.

CAP COM Stand by.

END OF TAPE

CAPCOM Walt, we're reading 42.6 in number -  
H2 number one and 39.2 in H2 number two.

SC Roger. I'll balance it out after the  
burn. You don't really need to wrap that - ham and apple  
sauce is a great dish.

CAPCOM Roger, ham and apple sauce. We're com-  
ing up on LOS. We'll have Canaries at 39.

SC Since you asked, steak and eggs are  
better.

CAPCOM Amen.

PAO This is Apollo Control, 163 hours,  
37 minutes into the mission of Apollo 7. We have 2 minutes,  
roughly, to wait before acquisition at the Canary Islands at  
39 past the hour. During this pass we heard fuel cell num-  
ber 2 condenser situation talked about. The suggestion  
from the spacecraft was to open the circuit now, cool it  
down, and put the fuel cell back on the line again just  
before the SPS number 5 burn on the next revolution. That  
was what they were instructed to do. To open the circuit  
and put it back on the line at 164 hours, 45 minutes into  
the mission which would be 15 minutes before the service  
propulsion system burn. It was also indicated that  
two fuel cells, however, can handle the loads involved.  
Cunningham indicated he had 15 clicks or 7 and 1/2 ounces  
of water. He had 6 and 1/2 to 7 hours of sleep. And that  
Schirra the spacecraft commander had had 4 and 1/2 hours  
of sleep. Cunningham indicated again that he understood  
that astronaut Pogue our CAPCOM here is a big TV fan of  
theirs. Schirra said that he would like to try for an  
emmy for the best weekly series at which point astronaut  
Pogue here in the control center said you mean a hammy.  
Cunningham indicated that ham and applesauce is a great  
dish. And Schirra said that steak and eggs are better for  
the CDR, meaning the spacecraft commander. We have 1 minute  
to wait for acquisition at Canary Islands. We will just  
stay on the line here and standby for conversation.

CAPCOM Apollo 7, Houston, through Canary.

SC Roger, loud and clear, Bill.

CAPCOM Roger. Have you done the E & S DELTA-V  
bias test yet?

SC Okay.

CAPCOM And as soon as you have finished with  
that, we would like a fuel cell O2 purge on all three.

SC Roger. I'm going to go ahead and do  
that now.

CAPCOM We thought maybe that - no, I guess it  
wouldn't hurt anything. Roger. Apollo 7, Houston, I have  
an update for the passive thermal control tests. However,  
if you are busy, we can hold off for a while.

SC Go ahead, Bill.

CAPCOM Roger. Passive thermal control, TO 166 plus 50, T aline 167 plus 16, attitude is 000. And that's it.

SC Roger. TO 166050, T aline 167 plus 16, roll 0 pitch 0 yaw 0.

CAPCOM All right, readback is correct.

SC Bill, did anybody take into consideration our perigee torquing on that alinement?

CAPCOM Yes, we had quite a discussion on that, Wally, and it turns out that - you spin this thing up about 10 minutes past perigee and go in attitude hold. They're willing to pay any penalty to get that thing set up for this so that you will be in the proper attitude at the proper roll rate as you go above 200 miles. If they use too much fuel on this, then they are willing to - do away with one of the or both of the other tests.

SC Okay, let's have all of the BTO guys get together in a huddle and add up their willingness for us to spend fuel and see if it meets our budget.

CAPCOM Roger. Well, that's what we have already done and they say they are willing to accept a cancellation of one or both of those later tests in order to get this done the way it is written out.

SC Okay, that's fair enough. I think we all- it's a new thing for all of us up here and I think we should be aware of it.

CAPCOM Roger.

SC We're putting in the same address and that phenomena is going to hurt us every time. I'm planning it right now in fact. I think I got advantage of it this time. It is driving me to the right attitude.

CAPCOM Good. Apollo 7, Houston, coming up on LOS Canary. We may be able to get you at Tananarive at 01. Also, we would like the biomed to CDR and note we have lost CNC EKG, request check harness.

SC Lock the MP. EKG, Roger. You notice that my main bus voltage, bill, is running right at 26 volts down here so it triggered it's lights on and off.

CAPCOM Roger; I just checked on that a minute ago and we were reading 26.9. Let me check again, here. 26.7 to 26.6 we're reading here Walt.

SC Okay, we triggered off the master line a little bit ago and I'm reading right at 26 on the onboard meter.

CAPCOM Thank you very much.

SC What about the (garble)

PAO This is Apollo Control, 163 hours, 47 minutes into the mission of Apollo 7. We have just lost

APOLLO 7 COMMENTARY, 10/18/68, GET: 16335 (CDT: 5:38a) 502/3

acquisition at the Canary Islands and we are looking for Apollo 7 at 164 hours, 1 minute at Tananarive. At Carnarvon we are looking for it at 164 hours, 14 minutes. At 16347 this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16402 (CDT 06:05a) 503/1

PAO                    This is Apollo Control 164 hours 01  
minute into the mission of Apollo 7. We are coming up on  
a pass, a very short pass, a 2 minute pass at Tananarive.  
We should have acquisition in a very few seconds. Let's  
stand by.

PAO                    This is Apollo Control 164 hours 03  
minutes into the mission of Apollo 7. We just had a voice  
check and that was all at Tananarive. We are standing by  
for Carnarvon, which will be 164 hours 14 minutes. At 164  
03, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16414 (CDT 06:18a) 504/1

PAO This is Apollo Control 164 hours 14 minutes into the mission of Apollo 7. We are on our 104th revolution, approaching Carnarvon acquisition, approaching Australia. After this Carnarvon and Honeysuckle pass, we will have an update of the past 8 hours of activity, or 7 and 1/2 hours of activity. Now let's join the conversation.

SC Roger, loud and clear. On the EMS pass, 5 passed for the duration of the burn, plus 30 seconds, which is when we turned her on - was .3 feet per second.

CAPCOM Roger, .3.

SC That's a minute and 36 seconds.

SC Bill, I would like to have you go over again what you have proposed for the DELTA-V counter setting on this burn.

CAPCOM Okay. The DELTA-V counter setting will be 1728.0. What this does, it is 100 feet higher than the DELTA-V you want to get and you will turn the thrust switches off at 100.0 indication on the DELTA-V c-counter, in other words, with a hundred feet remaining.

SC What is the reasoning behind that? The thing is still to turn itself off at 0. That's one of our primary checks on the SCS cutoff on the DELTA-V counter. I'll turn it off if it doesn't turn itself off at 0. This is a complete departure from the way we normally handle the DELTA-V counter and the SCS technique.

CAPCOM Roger, that is correct. However, the BTO calls for this as part of the test. I think it's in that little burn sheet on the inside cover of the flight plan.

SC The BTO is wrong then. The DELTA-V cutoff in the DTO, as I see it, we've looked at it, cutoff is in the thrust switches. I don't think enough people understand the TMS. I found that out as soon as we got it on board.

CAPCOM Walt, are you there?

SC I'm here.

CAPCOM Roger. We need fuel cell number 2 back on at 164 + 30. That's 30 minutes prior to the burn, instead of the 15 that I gave you.

SC Okay, I'll do that, but it looks to me like it's going to - that will give us just about enough time to get up the alarm stage again. Donn is still reading 170 about, on the condenser exhaust and 430 on the skin.

CAPCOM Let me see if I can get a compromise here.

SC Okay. I'll do - I'll go with whatever you guys want, but I would like to make sure we aren't jumping the gun. Also, I would like to know what your trim data shows on those radiators, so I will know whether to turn the

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SC pumps off or not.  
CAPCOM Roger, stand by. I will ask for that,  
it's still in process.

SC Okay, standing by.  
SC Bill, you do understand the normal  
cutoff at DELTA-V? That's what it's for. It will beat me  
any time.

CAPCOM Roger, I understand that. In fact,  
the way I had understood this was that you were using the  
thrust switches to turn it off just to check them. It's  
part of a -

SC They better work. They are all we've  
got. We got three burns and cutoffs: G&N cutoff, DELTA-V  
counter going through zero, and then DELTA-V burn switches.  
And I'm convinced that they must work, or I wouldn't be up  
here.

CAPCOM Right. This was a late change, Wally,  
and you have a 100 foot per second there to play with, so  
to speak. If they don't cut it off, then the LTVC will cut  
it off.

SC Roger. They have changed everything  
then, that is not the way we've been doing burn 5. And it  
says nothing about biasing the DELTA-V counter 100 feet per  
second. We've never done it. I'm hair-triggered for zero.

SC Hey, Bill.

CAPCOM Go.

SC I guess you have raised something in  
my mind. We did have an SCS burn where the DELTA-V counter  
did cut off, didn't we?

CAPCOM Roger, that is affirmative.

SC Okay. Let's bias it about 50 feet.  
I don't want to throw another 100 feet per second on this  
beauty.

CAPCOM Wally, 50 feet bias, feet per second  
bias, is okay.

SC Okay.

CAPCOM Apollo 7, Houston. One minute LOS  
Carnarvon. Honeysuckle at 22, S-band volume up.

CAPCOM Apollo 7, Houston. You might check  
the fans, might still be on, 02, tank 2.

CAPCOM Apollo 7, Houston through Honeysuckle.

SC Loud and clear.

CAPCOM Roger. Did you get my call to check  
the 02 tank 2 fans? We are monitoring them still on.

SC (garble) off, fellows.

CAPCOM Roger.

CAPCOM Apollo 7, Houston. Subsequent to our  
conversation on this DELTA-V setting, I just want to confirm  
that the setting will now be 1678.0.

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SC Roger, got it down.  
CAPCOM Thank you.  
CAPCOM Apollo 7, Houston. A few minutes ago, you gave me the drift for the EMS DELTA-V bias test as .3 and 1 + 36 seconds. I just wonder if I could get a readout of residuals from the EMS DELTA-V test.  
CAPCOM Apollo 7, Houston.  
CAPCOM Apollo 7, Houston.  
SC The fuel cell condenser - looking at the condenser temperature of fuel cell 1 now, and the skin temperature (garble). But I do have fuel cell 2 back on the lines.  
CAPCOM Roger, thank you.  
CAPCOM Apollo 7, Houston. Request a readout on the residuals from the EMS DELTA-V test.  
SC I ran the EMS DELTA - DELTA-V test is -21.7.  
CAPCOM 21.7, thank you.  
SC Hey, Bill, fuel cell 1 has got a skin temperature of about - between 435 and 440 and the condenser exhaust temperature is 178, it looks like now.  
CAPCOM Roger, we are reading slight lower than that, but we are watching it.  
SC Okay. They usually start coming down after I put fuel on the line, but I can't figure out (garble) condenser exhaust temperature.  
CAPCOM We are studying the problem too.  
CAPCOM Okay, we show number 1 coming, starting to come down slightly. We have 1 minute LOS Honeysuckle, Guaymas at 51, excuse me, Huntsville at 47.  
PAO This is Apollo Control 164 hours 29 minutes into the mission of Apollo 7. We have lost acquisition at Honeysuckle. We are anticipating contact with the Huntsville ship at 164 47. For a recap of the last, roughly 7-1/2 hours of the mission, from 157 hours through 161 hours, it was relatively quiet. At 160 hours, Donn Eisele reported he had taken 12 clicks, or 6 ounces of water. At that time, he was dumping the waste water. He was at 53 percent on the dump and bringing it down to 25 percent. At 161 hours into the mission, CAPCOM Pogue here at the Control Center, sent up the information to Eisele that Apollo 7 had a go for 121 dash 1, which means 120 revolutions. At 1 -

END OF TAPE

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PAO ... to Eisele that Apollo 7 had a GO for 121 - 1, which means 121 revolutions. At 162 hours into the mission the Canary Island tracking station acquisition Pogue told Apollo 7 that the S-4B stage, the Saturn stage, was ahead of the command and service module off the coast of Africa at about 400,000 feet. That S-4B stage is due to reenter at approximately 166 hours into the mission. Eisele's comment at that time was, "Adios Big Brute". Eisele at that time was keeping a watch on the spacecraft's attitude trying not to fire any thrusters to keep it within limits. At 162 hours 40 minutes over Carnarvon it was indicated that 165 frames were the maximum number of frames in the camera. Eisele had asked that question of the ground before, and after that it just keeps turning and there is no indication that there is no more film available. Eisele's comment there was, "Oh no, you've got to be kidding." Eisele then indicated that he had gotten three pictures of Carnarvon and terrain features of Australia. At that time CAPCOM Pogue indicated that our ground readouts here showed that the fuel cell number 02 condenser temperature was 174 degrees F and that if it went to 176 degrees F the alarm indication light would go on and not to sweat it because there was no reason for concern and we were watching it here on the ground. That condenser, the way it works on the fuel cell is the hydrogen pump provides a continuous circulation of hydrogen in the primary loop of the fuel cell, and it takes water vapor and heat from the spec - from the fuel cells - and through a series of bypass valves it regulates the flow through the hydrogen, what's called a regenerator, and through that to impart exhaust heat to the incoming hydrogen gas which of course is cryogenic, as that is required to maintain the proper temperature in the cell. Then the exhaust gas flows to the condenser, which is the thing in question, where the waste heat is transferred to the glycol and the resultant temperature decrease liquifies some of the water vapor. Well, this is the condenser that is in question as far as the temperature was concerned at that time. At 163 hours 20 minutes into the mission at Guaymas, Cunningham indicated, who was then awake, that fuel cell number 02 condenser the light had gone on, it was now an open circuit, and we are going to cool it down and put it on again. That was also according to ground instructions just before the SPS burn which was scheduled to occur at 165 hours into the mission. Cunningham indicated that he had taken 15 clicks or 7 and a half ounces of water and he had had 6 and a half to 7 hours of good sleep, and that the spacecraft commander, Schirra, had had 4 and a half hours of sleep. He also indicated he understood Pogue, the CAPCOM was a big TV fan of theirs, and Schirra chimed in about the TV that he would like to try for an

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PAO Emmy for the best weekly series. Pogue replied, "You mean a Hammy." We have had during the pass at Carnarvon further comment concerning fuel cell number 02 and the fact that Pogue indicated it should go on the line at 164 hours into the mission. Cunningham indicated that possibly we might get a warning light again if we put it on that soon, that if we waited till 164 hours 45 minutes or 15 minutes before the service propulsion system burn, that it might be better. However, at 164 hours 29 minutes fuel cell number 02 was put back on the line. The fuel cell number 01 then was indicating by an onboard reading by Cunningham that it was 178 degrees, and the condenser reading - and Pogue the CAPCOM, indicated that it was coming down, that we had a light reading on the ground - that it was coming down. At 165 hours into the mission we will go in for a fifth service propulsion system burn. It will be a performance test of the service propulsion system or engine, and it will be a propellant utilization and engaging system test, and also a control mode changeover test. The control mode changeover will be initiated under the guidance and navigation control mode first when the start the burn, and the last 30 seconds of the burn it will change over to a mode where the pilot onboard, Schirra, will control it with the hand controller. The resulting DELTA-V, or change in velocity, will be approximately 1646 feet per second. This will be the longest burn of the mission for the service propulsion system. It will be preceded by a 20 second ullage burn, and the total SPS burn will be 66 seconds long. In the flight plan the burn originally had been scheduled for 61.5 seconds for a change in velocity of 1465 feet per second. The resulting orbital change will put the spacecraft at an apogee of 240.6 miles, and perigee or low point of 89.8 miles. As I say, this maneuver will occur at 165 hours into the mission, which is 6 days 21 hours, that will at 7:00 Central time this morning. Our spacecraft sighting table indicates that for the 18th of October, this morning, the command and service modules, providing the skies are clear, could be viewed from Houston, Texas here, and it could be viewed approaching from the west southwest at 6:54 A.M., some 10 minutes from now, or a little more. Maximum elevation would be 38 degrees due south at 6:59 A.M. and it will leave going east at 7:02 A.M. There will be no TV scheduled for today and again the S-4B stage of the Saturn rocket vehicle should reenter at 166 hours ground elapsed time. At 164:40 this is Apollo Control.

END OF TAPE

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PAO This is Apollo Control, 164 hours, 47 minutes into the flight of Apollo 7. We are coming up now on the tracking ship Huntsville, and after that we have simultaneous acquisition almost by Guaymas and we'll go into a Stateside pass and we'll be live through that pass and during that pass we should have our 5th service propulsion system engine burn. Let's stand by.

CAPCOM Apollo 7, Houston through Huntsville.

SC Houston; read.

CAPCOM Apollo 7, Houston; go.

SC Roger, Bill; I just wanted to report the sextant star check was within a couple of tenths of a degree; very good.

CAPCOM Roger; within 2 tenths of a degree; thank you.

SC Right.

CAPCOM You have about 1 minute and -

SC On the alignment, this was (garble) of the initial alignment, the angles were 1 degrees, 2 degrees and 3 and a half degrees respectively.

CAPCOM Roger. 1 degrees, 2 degrees and 3 and a half degrees.

SC Right; that was after the course aligned attitude. And at the final line the angles were very small.

CAPCOM Roger; final line very small.

CAPCOM I had an advisory regarding the burn; relating to the fuel cell operation. Number 1; make the burn with 3 fuel cells on line of course if at all possible, number 2; it's okay to make the burn with 2 fuel cells; it would cost less than 1 amp per hour on the batteries, number 3; if the condenser temperature exceeds 200 degrees F; remove that fuel cell from line except during the burn.

SC Roger.

CAPCOM Walt, how are the fuel cells looking now?

SC They (garble)

SC Garble

CAPCOM Roger, LOS. Apollo 7, Houston through Guaymas.

SC Roger; go ahead.

CAPCOM Apollo 7, Houston. I'll give you a time check at 5 minutes.

SC Roger.

CAPCOM 15 seconds.

SC All SPS regulators post. (garble) control closed. Circuit breaker motor control 4 closed. 1, 2, 3, 4, -

CAPCOM 5, 4, 3, 2, 1 - mark. 5 minutes.

SC Roger; right on it (garble). Okay, AC off, retro fuel off, (garble) off, (garble) is 2, (garble)

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SC (garble) volt 3 command.  
CAPCOM Roger; command.  
SC (garble) right; pitch and yaw AUTO  
CAPCOM Go AUTO  
SC DBD fuel power; 1 and 2 ON.  
CAPCOM 1 and 2 ON.  
SC Control powered 1.  
CAPCOM 1  
SC Controller 2 arm, ON. Same bus time;  
they are both ON; give a motor pitch 1 yaw 1.  
CAPCOM Pitch 1; start.  
SC ON.  
SC Translation and controller clockwise.  
CAPCOM Clockwise.  
SC Verified OMT TDC. Pitch 2, yaw 2.  
CAPCOM Pitch 2; start.  
SC On. Jump to start; ON. (garble) 78 and  
49 last burn.  
CAPCOM Verify MT TDC.  
SC Go.  
SC TAC neutral.  
CAPCOM Thank you.  
SC And controller power both.  
CAPCOM Go.  
SC Do your turn maneuver.  
SC Terminated (garble)  
CAPCOM Okay.  
SC Okay, direct RCS ON. Direct ON. 4 trip;  
2 bags, or main attitude; excuse me. At (garble) tred; bags  
at rate 1 rate 2.  
SC 3 at 1 rate 2. (garble) Enter. (garble)  
pitch coming up. Pitch down - 0 - minus yaw, minus yaw  
(garble). Steady at 2 minutes.  
CAPCOM Okay, looks good.  
PAO This is Apollo Control; you just heard  
the crew in the countdown and the checklist prethrust check-  
out for the SPS number 5 firing. We are waiting now for a  
2 minute warning for the firing, which should come up in  
about 8 seconds from now.  
CAPCOM Mark; 2 minutes.  
SC Roger; with you.  
SC 2 minutes. Got the (garble) scale 55.  
SC 55.  
SC (garble) normal. A -  
SC Normal  
SC B  
SC Normal.  
SC And controllers arm.  
SC Upper arm is normal.

APOLLO 7 COMMENTARY, 10/18/68 GET: 16447 (CDT: 6:50a) 506/3

SC Fuel -  
SC Roger; GDC aligned. Standing by for  
30 - we have pugs loaded on (garble), circuit breaker 277  
flight QUAD recorder going on at 30 seconds.

CAPCOM Roger.

PAO This is Apollo Control. The first 36  
seconds of this burn will be handled by the G&N, guidance and  
navigation system, and the last 30 seconds will be by Schirra's  
manual thrust vector control, with his hand controller. We  
are now about 47 seconds away from the burn.

SC We have vector B is AUTO.

CAPCOM Roger; 30 seconds.

SC That is 20 seconds.

SC (garble) and counting.

SC All (garble).

CAPCOM 10 seconds -

SC Roger.

CAPCOM 5, 4, 3, 2, 1 - ignition. yabba-dabba-doo!

SC Steady. (Garble). ~~Rub a dub a doo.~~

PAO The SPS engine is now thrusting - the  
spacecraft commander Schirra said, "~~Yabba-dabba-doo.~~" This  
will be a 66 second thrust Delta V; the velocity will change  
1 646 feet per second.

SC Delta V thrust A and B is OFF.

SC OFF.

PAO We are informed that the attitude of the  
spacecraft during the burn has not varied, not more than  
2 to 3 degrees in any axis.

SC (garble) is OFF.

SC OFF.

SC (garble) ties are OFF.

SC (garble) coder.

SC Flight flow is OFF.

PAO This is Apollo Control. They are now  
securing the systems onboard. The SPS firing has completed.

SC (garble)

SC Roger; our residuals are minus 2 balls  
469 plus 00128 plus 0079; the Delta V counter is hardly  
visable due to the bright sunlight in the cabin; at this time,  
even with the numerics still up, so we're having it cut off  
itself.

CAPCOM Roger. Understand it cut off on the Delta  
V counter.

SC That's right.

CAPCOM Thank you.

SC Time reading 4.55 percent oxidizer  
left and 3.8 percent fuel left on the SPS.

CAPCOM Roger -

SC Houston, Apollo 7.

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CAPCOM Go.  
SC That's your big mistake in changing the rules in real time. At first off we couldn't see the Delta V counter.

CAPCOM Roger. We read that; I think that the situation is rather obvious now.

SC Okay, let's learn a big lesson from that. I recall we simulated that burn without doing that Delta V game.

CAPCOM Roger; that was a last minute change.  
SC That's correct; it didn't hurt us.  
That's the reason we went along with it. The Delta V counter residuals minus 17.5.

CAPCOM Apollo 7, Houston; we have you in a 89 by 2343.

SC Roger. I had a chance to look at the accelerometer; it was just a smidgen under 1G.

CAPCOM Right  
SC Which was a nice little experience for this long a time.

CAPCOM Right.  
SC It didn't even twitch a little bit when we took over the real nice transition into a SPS MPDC.

CAPCOM Roger; copy.  
SC There was a very minor control adjustments to keep it on.

CAPCOM Roger.  
PAO This is Apollo Control; the results of that burn, you heard, at 89 by 243 nautical mile orbit we had aimed for 89.8 by 240.6, so that's pretty well on the money.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16505 (CDT: 7:08a) 507/1

PAO This is Apollo Control. There are several things to be gotten from this SPS burn. Some of the requirements were to analyze the inertial measuring unit performance, the entry monitoring system performance, the SPS performance, and some of these readouts of course we don't have at this time but it certainly looks good from here.

CAPCOM Apollo 7, Apollo 7, over.

CAPCOM Apollo 7, Apollo 7; how do you read; over.

SC Roger; read you loud and clear.

CAPCOM Roger; we had to go to manual key.

SC That was a real nice maneuver because

she performed beautifully

CAPCOM Good.

SC (garble)

CAPCOM Nice to hear.

SC We may be mopping up water; we'll check

that a little later.

CAPCOM Roger. That ought to have settled quite

a bit out.

SC We are realigning to the D fuel line.

CAPCOM Roger.

PAO This is Apollo Control. Spacecraft commander Schirra just indicated the machine performed beautifully. This of course must also refer to the manual thrust vector control or his controlling the SPS engine during the last 30 seconds of that burn as well as the functioning of the spacecraft and the engine during the rest of the burn.

PAO This is Apollo Control. The command and service module total weight before this burn was 29 494 pounds before the thrust. After the thrust it was scheduled to be 25 036 pounds which would be a difference of 4 458 pounds. This is Apollo Control, 165 hours, 10 minutes into the mission of Apollo 7; we have had from all appearances a successful 5th and longest in duration SPS burn, which was scheduled to last for some 66 seconds, 30 seconds of which was manual thrust vector controlled by spacecraft commander Schirra. The resulting orbital situation now is 89 nautical miles perigee, or a low point, by 243 nautical miles apogee, or high point. The original aim was 89.8 nautical miles perigee, 240.6 nautical miles apogee. Spacecraft commander Schirra indicated the machine performed beautifully. We don't have any more definitive readouts at this time. We anticipate contact with the Canary Islands tracking station at 165 hours, 14 minutes into the mission, some 3 minutes from this time. At 16511, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16522 (CDT 7:40A) 508/1

PAO This is Apollo Control Houston at 165 hours 22 minutes into the flight. Over the Canary Islands a few minutes ago Wally Schirra had some observations about the press corps covering Apollo 7. Here is that conversation.

CAPCOM Apollo 7 Houston through Canary.

SC Roger. Hey Bill, we've had our primary evaporator shut down for - coming on the about 36 hours I guess, or 30 hours. How often am I going to have to reservice that? It's going to be susceptible to drying out just like the secondary isn't it?

CAPCOM Stand by.

CAPCOM Apollo 7 Houston. Recommend leave the primary evaporator as is. We will open up back pressure valve prior to 48 hours elapsed, and ground is not particularly worried about that.

SC Thank you, I'm glad they are not.

CAPCOM That's very good hearing.

SC If you read roger tell us, will you?

CAPCOM Roger.

SC Hey Bill, how come you let the third team stay on for the big burn?

CAPCOM Well we had to have some practice.

SC Yes, you'll have something to say in your press conference today.

CAPCOM What's this?

SC Aren't you having those duty press conferences when you break up?

CAPCOM Oh, no, I've been working the grave yard shift. I haven't had any of those.

SC Oh, the press corps goes to bed when you're working.

CAPCOM Roger. Donn and I have been having conversations.

SC Bill, we're beginning to breath during the day.

CAPCOM Apollo 7 Houston, 1 minute LOS Canary, Tananarive at 31.

SC Roger (garbled)

CAPCOM Say again, Wally.

SC I said our residuals are exactly 52 per second.

CAPCOM Roger, copy that.

END OF TAPE

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PAO This is Apollo Control Houston 165 hours  
31 minutes into the flight. We are about to tag up with  
Apollo 7 by Tananarive. Let's listen.

COMM CAPCOM, COMTECH  
CAPCOM Apollo 7 through Tananarive.  
SC Garbled.  
CAPCOM Roger. Wally, just one thing on T  
aline for this passive thermo control test. If you set in  
the T aline that we have given you prior to 166 plus 50  
you'll have to do it over again.

CAPCOM I'm sorry, that's 165 plus 50.  
SC garbled.  
SC Houston, Apollo 7.  
CAPCOM Go ahead 7.  
SC Bill, we called in to the station at  
Tananarive and found out (garbled)  
CAPCOM Roger, stand by.  
CAPCOM Apollo 7 Houston.  
SC Go  
CAPCOM Donn, if you set in the T aline that  
we gave you for this passive thermo control test prior to  
165 plus 50 you'll have to redo it again.  
SC I understand that. Wally had it up there  
originally.  
CAPCOM Okay, real fine.  
SC Yes, that's two for today. We've only  
got a little. Jack, I ought to do it over, off hand. Is it  
that (garbled) area or did you say you were going to find  
(garbled)  
CAPCOM Well, what it does, you'll be over one  
rev ahead on the integration there.  
SC This is Apollo 7 Over. Hey Jack, are  
you still there?  
CAPCOM Roger, Walt.  
SC We were (garbled) and that put us back up  
to aline (garbled)  
CAPCOM Okay, Walt, we would like to leave fuel  
cell on the line to see if T sub CE goes on up toward 200  
again.  
SC (garbled) if it's okay with you I'll just  
leave it at 200 and cycle back to (garbled)  
CAPCOM Affirmative, Walt.  
SC (garbled) Are you still there Jack?  
CAPCOM Apollo 7 Houston go ahead.  
SC We'd really like to put a little water on  
the bulkhead after our last burn because it's probably (garbled)  
we've marked the parameter of the (garbled) on the aft bulk-  
head and somebody can calculate how much water we need there.  
CAPCOM Roger, understand.

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SC (garbled) water sort of bunched up off  
the floor.

SC We also had water coming out of the  
water vector but that didn't ball up.

CAPCOM Okay, copy that.

SC It's coming out in big drops. We can  
(garbled) and can probably handle the (garbled)

CAPCOM Okay, Wally, the comm here at Tananarive  
isn't too good. We'll pick you up over Carnarvon, and let's  
get a good rundown on it then at 165 plus 47.

SC (garbled)

SC AT 65 hours 39 minutes, and Wally's  
(garbled)

CAPCOM Roger, copy that Wally. We're just about  
to lose you over Tananarive and pick you up over Carnarvon.

SC (garbled)

PAO This is Apollo Control. You heard Wally  
Schirra note during that pass the water gun is sputtering  
a bit. As he put it it's putting out more gas than it is  
water. We'll be taking a look at that system here as the  
spacecraft swings across the Indian Ocean. At 165 hours  
41 minutes into the flight this is Apollo Control

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16552 (CDT 08:10a) 510/1

PAO At 165 hours 52 minutes. And through Carnarvon, we are having a discussion with the crew about fuel cells. Let's listen.

CAPCOM Apollo 7, Houston through Carnarvon.

SC Roger. I prepared your torque start on this one with the thrust on the perigee about 130 degrees local, pitch down 30 degrees, went right on down through 270 and as we climbed to a high apogee, there was not enough fuel there to affect us, so we did a nice sweet loop right through apogee.

CAPCOM Roger, copy that.

SC 290 degrees local vertical.

CAPCOM Roger, copy.

SC We remarked back there at Tananarive and let's not make changes in the system at the last minute. That's how I got a sweet little 50 feet per second overburn on that last burn 5.

CAPCOM Roger, copy, Wally.

SC I thought we learned that a long time ago. It would have been 100 feet per second if I hadn't cut it down to 50. Our problem was the sun to hit right on the DELTA-V counter and the burn switch was up full bright, and that was not sufficient to keep it illuminated.

CAPCOM Okay, understand.

SC Now we did do burn 5 with MCC in the past.

CAPCOM Okay. Wally, on the fuel cell, we have been plotting rad-in and rad-out temperatures and it looks like we got a good DELTA-T, so it appears right now that the coolant pump is working.

SC Good news. Except what is the problem then?

CAPCOM Wally, we are really looking at the data here and we are going to let you know as soon as we get some time history on the data after Carnarvon here.

SC I think you will have a new page in that malfunction book.

CAPCOM What we would like to do is see if the condenser exhaust temperature will stabilize. That's why we would like you to let it go to 200.

SC Got it. We can't possibly have an internal problem, jack. One of the things that surprised me was when I took fuel cell 2 off, fuel cell 1 then started to climb in condenser exhaust and skin temp and at a greater rate than fuel cell 3, although both of them were picking up the same amount of added load. Fuel cell 3 held everything right in there, its controls seem to be a lot better than fuel cell 1. And as soon as I put fuel cell 2 back on the line to pick up its share of the load, fuel cell 1 came back on down again.

APOLLO 7 COMMENTARY, 10/18/68, GET: 16552 (CDT 08:10a) 510/2

CAPCOM Roger, we follow that, Wally. We are looking right now at something in the regenerator there.  
SC Roger, sounds about right. And Apollo says to cut the .3 degree percent in pitch and we will start looking for inertial.

CAPCOM Roger. Now Wally, we showed a - we would like you to switch quad bravo to secondary tanks now.

SC Roger. Bravo secondary on, bravo primary off.

CAPCOM Copy that.  
SC You must know something we don't on that one. Oh, you're reading that aren't you?

CAPCOM Roger, Wally. We used just a little bit more than we expected during the burn on quad bravo there.

SC How close is the balance now?

CAPCOM Stand by, we will have it for you.

SC Good.

CAPCOM Wally, the difference between bravo and delta is 13 pounds.

SC Roger.

CAPCOM Walt, I have this SPS propellant thermal control pad to give you whenever you are ready.

SC Houston, this is Apollo 7.

CAPCOM Go ahead.

SC Did you notice our DSKY?

CAPCOM Negative, I've been looking at the fuel cells, stand by.

SC And do you notice our inertial attitude? That's on you all. We had free ride to 000, now we got to go fly back again.

SC Hey, Jack.

CAPCOM Go ahead.

SC You have the SPS propellant thermal control update

CAPCOM Roger. Your key zero is 167 + 57, roll 004, pitch 183, yaw 020.

SC Is our key align required on this one?

CAPCOM Negative, Wally.

SC Roger.

CAPCOM Apollo 7, we are 1 minute LOS Carnarvon. We will pick you up at Honeysuckle. You want to turn your S-band volume up.

SC Okay. What time do you pick us up, Jack?

CAPCOM We've got continuous coverage now. We are really high, we've got wide overlapping coverage.

SC Very good.

CAPCOM Apollo 7, Houston, opposite omni.

SC Copy, but you sure have a lot of grass

APOLLO 7 COMMENTARY, 10/18/68, GET: 16552 (CDT 08:10a) 510/3

SC in the background. Could you turn  
the volume down?

CAPCOM Roger, copy.

SC Apollo 7.

CAPCOM Go ahead, 7.

SC Would you check to see if with the  
Maurer movie camera, 18mm lens, at (garble) frames per  
second, whether we overlapped on frame exposure, over.

CAPCOM Okay, Wally, we have a real garbled  
signal here at Honeysuckle. I'd like to wait and get you  
through Hawaii. We pick up Hawaii at 166 + 15.

SC Okay. The subject is the movie camera.

CAPCOM Okay. I copied something about the  
movie camera, but I didn't get it all.

SC Okay, I'll wait.

END OF TAPE

APOLLO 7, COMMENTARY, 10/18/68, GET: 16615 (CDT: 8:18a) 511/1

PAO This is Apollo Control, Houston at 166 hours, 15 minutes into the flight. A few minutes ago it was confirmed to us through Norad and through the Goddard Space Flight Center sources, that the S4B, the second stage of the Apollo 7 booster, has reentered the earth's atmosphere, and apparently burned up. The reentry took place south and east of the Indian Peninsula in the Indian Ocean. Presently estimating the time of reentry at 4:30 am, Central Daylight Time, on this time. We have acquired through Hawaii and here's how that conversation is going.

CAPCOM Apollo 7, Houston through Hawaii.

SC Roger. (garble) a good mark on the perigee torquing.

SC The whole thing can be on automatic power as far as I'm concerned so that fuels on the ground check and let's get some data on how fast it goes up at this high velocity and perigee.

CAPCOM Okay, real fine Wally.

SC Perigee is at about 43 - just before we started the test.

CAPCOM Okay, copy that.

SC You might get the (garble) fuel usage on this too; I'd like to find out if this might be a setup you'd have just prior to a burn for some later mission. Eventually an over locked (garble) could you check on that?

CAPCOM Okay, will do.

SC We do need to use six frames a second, but its so we can handle that too.

CAPCOM Okay.

SC Houston, Apollo 7.

CAPCOM Go ahead Walt.

SC What about a map update to (garble) and check.

CAPCOM Inward.

CAPCOM Okay, Walt, ready on your map up dates.

SC Go.

CAPCOM Okay, for rev 106, the time of the node is 167 plus 42 plus 37; longitude 157.3 degrees east.

SC Say time again please.

CAPCOM Roger; 167 plus 42 plus 37.

SC Roger; thank you.

CAPCOM And, I have the morning news if you would like to hear it.

SC I'm ready to copy.

SC We have the xerox machine working.

CAPCOM Copy. Jackie Kennedy and Aristotle Onassis are to be married soon. She and her children left New York last night to join him at his home in Greece. He's one of the world's more wealthier men, 62 years old, she's 39.

SC That's Greek to me.

APOLLO 7 COMMENTARY, 10/18/68, GET: 16615 (CDT: 8:18a) 511/2

CAPCOM Roger. We saw the spacecraft loud and clear this morning from Houston.

SC Oh great. Very good.

SC Send a picture of it.

CAPCOM And from the avalanche of cards and letters that Penny's gotten, everybody must have seen your sign.

SC Oh no. Hope somebody's reading them. There were times when the report was that we came back too fast (garble). It was broken today. They'll understand; they were in the category of smokers.

CAPCOM Roger (laughter). Gladys is supposed to come onshore today near Tampa, early tomorrow. Winds are down to about 65 miles per hour, weather bureau calls it a minimal storm.

SC That's good to hear.

CAPCOM And the US won it's 6th gold medal in track yesterday by winning the high hurdles.

SC Houston, this is Apollo 7.

CAPCOM Go ahead 7.

SC Roger; we lost you after the 6th gold medal report.

CAPCOM That's all the morning news.

SC Okay, I send you one. Thank the boys in the back room for the pitch and yaw gimble settings; that was great on that engine.

CAPCOM Roger.

SC Just slid right in.

PAO This is Apollo Control here. Well, we seem to have a very reactive, jolly crew this morning. Upon being read the item of the upcoming marriage of Mrs. Kennedy and Mr. Onassis, we thought we heard Captain Schirra remark "That's Greek to me." - and a little later they all seemed to take great delight in the fact that Wally's secretary is being deluged with the cards and letters which were advertised earlier in the mission.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16625 (CDT 8:28A) 512/1

PAO ... the cards and letters that were advertised earlier in the mission. The comm is a little choppy here over the Huntsville, but we'll continue to monitor.

SC We're coming through Honeysuckle, right?  
SC Can I confirm that that last map update that you gave was the next ascending node coming up?

CAPCOM Apollo 7, could you switch omnis?  
SC Roger, could you confirm that the map update that I have is for the next ascending node that is coming up?

CAPCOM Stand by.  
SC I show 167 plus 43. Could you verify?  
CAPCOM Roger, Walt, the time of the node is 167 plus 42 plus 37, that will be for the orbit coming up.

SC Okay, Jack, if you get a chance in the future we just assume we have the ascending node.

CAPCOM Apollo 7 Houston.  
SC ... two revs ahead because our chart is not as accurate as it used to be with our change in inclination. That way we can have more accurate charts for a longer period of time.

CAPCOM Okay, Walt, we just had a handover and I didn't get all you said, but I think the basic part of it is you'd like a map update about every two revs. Is that Charlie?

SC Negative. We'd like - whenever we call for a map update we'd like to have it for about two ascending nodes in the future. Over.

CAPCOM Okay, copy that.  
SC Jack, you might tell the boys at Carnarven we got a good picture of them today.

CAPCOM Okay.  
SC Houston, Apollo 7.  
CAPCOM Go ahead 7.  
SC Did you get me an answer on that frame overlap?

CAPCOM It's in work.  
SC Okay, we're about ready to strip here.

CAPCOM Okay.  
SC You can play the music.  
CAPCOM Roger:

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16635 (CDT 08:38a) 513/1

SC Houston, you are a little high in  
cirrus, but generally wide open.  
CAPCOM Roger, concur.  
SC We see no thunderstorms in the Gulf,  
going to the west of you, there is a band of weather, approx-  
imately around the San Antonio area, and another band over  
towards New Orleans.

CAPCOM Roger, thank you.

SC We are stripping at 1 frame per second.

SC Getting a good look at the hurricane,

Jack.

CAPCOM Roger.

SC She's high, you wouldn't believe it,  
and wide. We are just passing the eye, got a glimpse of it.  
Took a photograph of it. That was frame 13 of magazine R.

CAPCOM Okay, copy that, Wally.

SC The Cape is loud and clear. We can see  
all the launch pads and it's raining (garble) which makes  
us ready for business. We can see Saturn V on the pad.

CAPCOM Oh, rog.

SC Jack, those guys over in Kuehnel's shop  
should have that answer for you by now on that fuel overlock.

CAPCOM Roger, Wally, I've been writing them  
and they say it's coming.

CAPCOM Okay, Wally, I've got some happiness  
for you.

SC Grand.

CAPCOM Okay, for your fuel chart.

SC Go.

CAPCOM Okay, present value on your chart  
should be 598. Your SCS redline 554, DAP redline 472, and  
the hybrid redline 236. How's that for happiness?

SC Very nice. We're up on it.

CAPCOM And the quad balance is such that we  
have got all those redlines.

SC Jack, does that 598 include the 60-80  
pounds unusable?

CAPCOM Includes the unusable.

SC That's a chart update.

CAPCOM Roger, that's your chart update, Wally.

SC Okay, I want to see what kind of fuel  
we use after this session.

CAPCOM Okay.

SC We're whistling right through perigee.  
Are you plotting these on your chart down there, Jack?

CAPCOM Yes sir, I am.

SC Okay, look at the difference between  
yesterday's numbers 666 with a 598, like 68 pounds.

APOLLO 7 COMMENTARY, 10/18/68, GET: 16635 (CDT 08:38a) 513/2

CAPCOM Affirmative. We are calling it.  
SC That's quite a big drop.  
CAPCOM I agree.  
SC Say, Jack, this is Donn.  
CAPCOM Go ahead.  
SC That seemed like an awful lot of fuel  
for more than we've done since yesterday. Could you have someone  
run through their data down there and see if they can ascertain  
just when and in what condition we used up all the fuel?  
CAPCOM Okay. We are doing a good analysis  
on it now, Donn. We will get it back to you.  
SC Okay, because I don't think we should  
have used more than about 15 or 20 pounds at the outside  
for that burn today.  
CAPCOM Okay, in work.  
PAO This is Apollo Control here. This  
fuel discussion, quads A through D, as in dog, read like  
this presently, according to our televised data coming  
through from telemetry. Quad A 150 pounds, quad B 149,  
quad C, charlie, 146, quad D, as in dog. 162. The SPS fuel  
remaining 1,118 pounds, the SPS oxidizer remaining, 1,859  
pounds. We used about 1700 hundred pounds of fuel and nearly  
3,000 pounds of oxidizer, 2800 hundred, in that big burn  
this morning.  
CAPCOM We've got an update number for you  
on your chart value.  
SC Go.  
CAPCOM Okay. 628.  
SC Ah ha. That's a little better. That  
is much better news.  
CAPCOM It's 30 pounds more happiness.  
SC That's a real hump in that curve.  
CAPCOM Roger.  
SC We'll not lose confidence about out fuel if  
we keep that up.  
CAPCOM Roger.  
CAPCOM Apollo 7, Houston. We are about to  
lose you at Antigua. We will pick you up at Ascension at  
53.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16655 (CDT 8:57A) 514/1

PAO Apollo Control Houston at 166 hours 55 minutes. A minute or two ago we acquired over Ascension.  
SC And I'm pumping it out now.  
CAPCOM Walt, something - a note of interest here. The T sub CE that you are reading on your gage is approximately 3 degrees higher than the actual (cut out)  
SC Roger. The - it triggerd the master alarm at 178 yesterday. (garbled)  
CAPCOM Okay, copy that, Walt, and the answer Wally to your question on the 16mm camera, at 90 miles, which you are going through perigee, you'll have about 70 percent overlap at one frame per second, and at apogee of 245 you'll have about a 75 percent overlap.  
SC This is Apollo 7. Are you getting our data real time or do you want us to be recording it?  
CAPCOM 7, could you say again your message?  
SC (garbled)  
CAPCOM Stand by Walt.  
CAPCOM Walt, we're playing the DSC as normal. We have high bit rate over the stations, we'll put it low bit rate record as we get LOS, and opposite omni.  
SC Roger. Before you go, we are doing a DTO now and it will be (garbled)  
CAPCOM We'll give it back to you as we leave you, Walt..  
CAPCOM Apollo 7 we'd like to go quad Alpha secondary.  
CAPCOM Apollo 7 did you copy that?  
SC Roger.  
CAPCOM Walt, you are confirming quad A is in secondary now?  
SC Affirmative.  
CAPCOM Thank you.  
SC Jack, say again about quad A.  
CAPCOM Roger. We'd like you to switch to secondary tanks on quad ALPHA.  
SC You want quad A secondary. Is that correct?  
CAPCOM That is correct.  
SC Quad A is now secondary.  
CAPCOM Roger. We're about 1 minute LOS Ascension, we'll pick you up at Tananarive at 08.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16725 (CDT: 9:28a) 515/1

PAO This is Apollo Control Houston, at 167 hours, 25 minutes into the flight. The crew has been having a late breakfast for about the past hour, and we had no contact with them through Tananarive; the communications were so choppy during the earlier pass, it was just decided not to attempt it. This morning, we did put in a call and establish the line but that's all that was done. The spacecraft is in a cold soak, service propulsion system cold soak, test, wherein for approximately 1 complete rev, the attitude will be held so that the service propulsion systems sees only cold space and not the sun. We have put in a call through Carnarvon however little more than an identifying answer has come back. Let's listen.

CAPCOM Houston, through Carnarvon.  
SC Here.  
CAPCOM Apollo 7, opposite OMNI.  
SC Houston to Apollo 7.  
CAPCOM Go ahead 7.  
SC I think you can notice our pitch and yaw staying in quite tightly here; we are just drifting with the roll rate.

CAPCOM Roger, that's what we're seeing.  
SC Roger; just threw it to you.  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Wally, on this SCS attitude control test that's coming up, we would like to move it to, from 16800 to 16830; this will move it away from perigee and you'll use less fuel.

SC Ah hahh; that's what I asked yesterday.  
16830.

CAPCOM Roger; 168 plus 30 begin the SCS attitude control test and you can cut it off at 16910. Thought I'd help you out a little bit more; going 40 minutes rather than an hour.

SC Roger.  
SC Better take us B plus 3 hours into the test here.

CAPCOM Say again Wally.  
SC Okay, I took the temperature part; I see.  
CAPCOM Roger.

SC Okay.  
SC I wish they hadn't had that in tight

dead band.  
SC Roger. Wish we had started at perigee.

CAPCOM Roger.  
SC It seems to be pretty close to the end of the pass, so you can just make note of the numbers; you won't have to log them.

CAPCOM Okay.

APOLLO 7 COMMENTARY, 10/18/68, GET: 16725 (CDT: 9:28a) 515/2

SC When you get LOS take your last number.  
CAPCOM Copy.  
SC Any roll jet - (garble) the drifting part.  
CAPCOM Roger.  
SC I'd say it's turning about a 2 - 2 and  
a half degree cone and the 3 zeros.  
CAPCOM Okay, copy that.  
SC This is very small.  
CAPCOM Wally, is that cone getting any bigger  
or is it staying about the same?  
SC It seems to be getting just a little  
bit bigger now; it's burning up to a three if you can see.  
CAPCOM Roger.  
SC It is diverging slightly.  
SC That proves a point; pitch is going out.  
SC And the flight yaw rate developing which  
is making up in (garble) develop.  
CAPCOM Copy that.  
SC Now it appears it's trying to pick up  
(garble).  
CAPCOM You're right at apogee now.  
SC (garble) is down (garble).  
CAPCOM Roger.  
SC There we go; got 45 minutes to go, right?  
SC How much more time do you have in this  
pass?  
CAPCOM We are just about 1 minute LOS Carnarvon;  
we have a very low angle pass at Guam at 39, then Hawaii at  
50.  
SC Roger; I'm only about a minute away from  
end of testing and take these angles for us.  
CAPCOM Okay, we are copying them.  
SC Roger.  
SC The reason yaw is decreasing of course  
is we are flying across the belly band now.  
CAPCOM Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16735 (CDT 09:38a) 516/1

PAO                    We have lost signal through Carnarvon  
and we will pick up the spacecraft in Hawaii. Guam will  
be very low. I doubt they even established contact. About  
167 hours 35 minutes into the flight, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16751 (CDT 9:54A) 517/1

PAO This is Apollo Control Houston 167 hours and 51 minutes into the flight on the 106th revolution around the earth. A call has gone out to the spacecraft through Hawaii, we haven't gotten a Roger. Our apogee and perigee right now 89.9 nautical miles by 244.4 nautical miles. Earlier today you heard discussions about the fuel cells. Let's take a look and see how they're fairing, reading data coming to us through Hawaii the load sharing looks like this: 32 percent on fuel cell 01, 34.9 on fuel cell 02, and 33.1 on fuel cell 03. They're pulling within 24 to 26 amps each, and all in all are behaving quite well. The temperature started to mount on one of the fuel cells earlier, and it was taken off the line. Our present temperatures read like thus: fuel cell 01 160 degrees F, and fuel cell 02 178 degrees F. Fuel cell 01 161. We'll monitor here the Hawaii pass and come back with more information about consumables in just a moment.

CAPCOM Apollo 7 Houston through California.  
SC Roger I want to record a comment that we've been awfully concerned about the high forces on the switches that may close a loop by catching the (garbled) at the same time they activate the switch. As a result it won't read around the cockpit.

COMM It's on its way, Roy.  
CAPCOM Roger.  
CAPCOM Apollo 7, would you turn up your S-Band so we can get you to S-band through Goldstone?  
CAPCOM Apollo 7, how are you reading through Goldstone.

SC Loud and clear.  
CAPCOM Roger.  
SC We're starting into perigee and PEF, and it looks like it's going to hop right over to SCS. I'll just let it ride.

CAPCOM Okay, copy that.  
SC I want to sample it from my STAS table and PES. Apparently it likes SCS best.

CAPCOM Roger, it's streamlines I guess.  
SC (garbled)  
CAPCOM And Wally, Jo is in the viewing room.  
SC Very good, I'll drop in some time next week.

CAPCOM Roger.  
SC I'll drop in the front room and thank you cats for a pretty good show.  
CAPCOM Roger.  
SC Considering Laron and Bill Shaffer can target pretty well.  
CAPCOM He'll be happy to hear that.

APOLLO 7 COMMENTARY, 10/17/68, GET: 16751 (CDT 9:54A) 517/2

SC All we're doing is pumping roll and yaw  
here, Jack. (garbled) looking right over the top.  
CAPCOM Okay, copy that.  
SC (garbled) apogee.  
SC (garbled) clock is (garbled)  
CAPCOM I didn't copy that, Wally.  
SC You can see the (garbled) the same  
attitude as we did at 57.  
CAPCOM Okay, copy that, Wally.  
SC And we're not at perigee yet either, are  
we?  
CAPCOM Not quite at perigee, Wally.  
SC About 13?  
CAPCOM Wally you will be at perigee in 7 minutes.  
SC Roger.  
SC Jack at 14 we could see in the back of  
the (garbled).  
SC 1/10th per second in pitch.  
CAPCOM Roger, copy.  
SC Hey Jack, have you guys figured any  
(garbled) of this condenser drop temperature yet?  
CAPCOM Okay, Walt, it appears to be leveling  
off slightly, but we're still watching it, it's not conclusive  
yet.  
SC Roger.  
SC (garbled)  
SC PTA where we had attitude hold backs  
dead band. We had hold backs dead band (garbled) and limit cycle  
auto OFF.  
CAPCOM Okay, stand by.  
SC Okay.  
CAPCOM Roger, Wally, that will be Rates Low  
limit cycle OFF.  
SC And (garbled) Okay?  
SC We're stuck to 6/10 of a degree per second  
here.  
CAPCOM Roger, we're copying the rates.  
SC Great, I think we all agree it was a  
(garbled).  
CAPCOM Roger.  
PAO This is Apollo Control Houston. We've  
been watching the biomedical values as the Apollo 7 sails  
overhead, and we're getting biomedical on Walt Cunningham.  
We're showing right now a heart rate of 68, there it switched  
to 67 beats per minute, and all other quantities look quite  
normal. He is apparently moving around. We've seen a  
variation in the heart of about 10 beats per minute. He  
must be moving around the cabin a little bit. The cabin  
itself is still holding at 5.1, cabin temperature a very

APOLLO 7 COMMENTARY, 10/18/68, GET: 16751 (CDT 9:54A) 517/3

PAO	steady 68 degrees.
SC	We're really whipping around up here.
CAPCOM	And we're seeing those rates.
SC	we're having our dinner chow over
pea soup and all that good stuff right now.	
CAPCOM	Roger.

END OF TAPE

SC Nobody will swap for the bite size.  
They're just throwing them all away.  
CAPCOM Copy that.  
CAPCOM 7, when do you feel you will be getting  
into SPS cold soak attitude?  
SC Oh, soon as this rate starts dropping  
off, Jack. I've got six tenths, it's decreasing now. I should  
be hitting 180 pretty shortly.  
CAPCOM Okay, copy.  
SC I'll stop it on this revolution here.  
CAPCOM Okay.  
SC I'm going through a - about 75 degrees  
pitch down.  
CAPCOM Roger  
SC Are we going over Bermuda?  
CAPCOM You are going down the islands just  
north of Cuba.  
SC Okay.  
SC Hey, Jack. How about a map update, please.  
CAPCOM In work, Walt.  
SC Notice how the rate has damped out.  
CAPCOM Roger. Walt.  
CAPCOM Walt, we're showing that oxidizer line  
temperature is getting close to the heater limit, you might  
look for that.  
SC I have been operating my heaters on the  
propellant tank line temperature.  
CAPCOM Rog.  
SC I have just shot frames 20 and 21 of  
islands in Tananarive on magazine R.  
CAPCOM Copy.  
SC 18 and 19 also.  
CAPCOM Apollo 7, Houston I have your map update.  
SC Roger.  
CAPCOM Okay, Walt, for rev 110 time of the node  
173 plus 44 plus 35 longitude 64.6 degrees east.  
SC Roger.  
SC Frame 16 magazine R with another island in  
that same chain.  
CAPCOM Roger, copy that.  
SC Hey, Jack, do you have the time of our  
closest approach to Ascension?

APOLLO 7 COMMENTARY, 10/18/68, GET 1681200 CDT 10:15a 518/2

CAPCOM Stand by, Wall.  
CAPCOM Walt, your time of crossing Ascension  
will be approximately 3248.  
SC 3248? Looks like we come pretty close  
to it.

CAPCOM Roger.  
SC (garble) that attitude now.  
CAPCOM Roger, copy.  
PAO This is Apollo Control, Houston, 168 hours  
23 minutes and that will wrap up the communications of the  
stateside pass. We'll be up in Ascension in a few minutes.

END OF TAPE.

APOLLO 7 COMMENTARY, 10/18/68, GET: 16839 (CDT 10:42a) 519/1

PAO : This is Apollo Control 168 hours 39 minutes into the flight. At Ascension, we simply had a callup and identification, no comments. That will probably be Tananarive in about 3 or 4 minutes. We want to alert you to the fact that at 45 minutes after the hour this morning, 3 minutes from now, we will be showing through the Houston News Center, the tape of yesterday's television pass. The tape of yesterday's television pass, it's been run through our machine, it's the original tape recorded at the station. It is quite cleaned up and it is well worth seeing. We heartily recommend it to you. At 168 hours 40 minutes into the flight, this is Apollo Control Houston.

END OF TAPE

PAO This is Apollo Control, Houston, 169 hours 1 minute into the flight and some 5 minutes ago at ground elapsed time 168 hours 56 minutes, we have experienced a rather massive loss of circuits throughout our world net including the Goddard - the terminus - the hub of this data network which is Greenbelt, Maryland, the Goddard Space Flight Center. At first we thought the loss was confined to our high speed data circuits, since then the network flight controllers confirm that we've lost all our data circuits. We do have a good voice communications circuit, however, of course, to all stations and to the spacecraft and we'll operate with it. The effect of this is we'll only be able to read data when the spacecraft is overhead. We'll keep you advised as to the progress, we expect it's probably only a momentary dropout. We'll give you a status report on it as soon as it's available. We're in touch with the spacecraft over Carnarvon, let's listen to the conversation.

SC (Garble).

CAPCOM (Garble) deadband low rate test from there on. We should be through with that before we get on into perigee.

SC I'm max deadband low rate now.

CAPCOM Okay, real fine.

SC 41 and 10, max deadband high rate.

CAPCOM Roger.

SC If we go max deadband in high rate that will be good enough for the cold soaks, so I'll do that at 10.

CAPCOM Okay, the attitude before should have been min deadband high rate, now we should be max deadband low rate.

SC Okay. I'll reverse it, I had max deadband low rate so far.

CAPCOM Okay, then pick it up min deadband high rate and we'll try to get done before we go through perigee.

SC Okay. I'll switch it now then Jack, just to make it early.

CAPCOM Okay.

SC Hey, Jack, you may have lost your data readout but I've got good ones on board here and I've checked the oxidizer line temperature down the wall and it looks like it's a little - something under 170, propellant tank temperatures are a little under 165 and that should be as good as your data readout. What I'm saying is that we're never going to get down to the point where I'm going to

APOLLO 7 COMMENTARY, 10/18/68, GET: 16901 (CDT 11:04a) 520/2

SC check a heater out. I might suggest that when we do terminate this test it will be useful to turn on the SPS line heaters to A/B and watch for a rise at least to see if they're working at all.

CAPCOM Okay, we copy that.

SC Okay, do you concur with that?

CAPCOM We're going to put that in the mail and discuss it here.

SC Jack, on Tananarive it turns out you can broadcast in the blind and the odds are we'll get it, but we can't seem to talk back to you.

CAPCOM Okay, fine, Wally.

SC We'd like to pass that on to the other flight controllers.

CAPCOM Will do.

SC Thank you.

CAPCOM Apollo 7, Houston.

SC Go ahead, Jack.

CAPCOM Roger. We've got data back now and we need about 40 minutes at this min deadband high rate then you can return to the normal cold soak attitude configuration.

SC Would you say that is a new good configuration of 40 minutes there and that you want to keep going a little close like that?

CAPCOM Affirm. We'll look at it over Guam and see what the trend is there.

SC If you don't hear data readout, (garble) and I'll give you my readout and then (garble) from behind.

CAPCOM Okay, we've got data now.

SC (Garble).

CAPCOM Say again, Wally.

SC Could you find the COMSAT operation, we lost the line down there.

Can you give me a readout of hydrogen A1 quantity and hydrogen A2 quantity?

CAPCOM Okay, stand by.

SC Jack, we made the remark after about 8 days of stirring a clock (garble), I'm sure you guys are going to think they're all right.

CAPCOM Roger, Wally, we'll get back to you on that, we'll discuss that pretty closely and I'm getting your tank quantities, wall.

SC Go ahead.

CAPCOM Wall, on the hydrogen quantity, tank 1, 39.8. Tank 2, 37.6.

APOLLO 7 COMMENTARY, 10/18/68, GET: 16901 (CDT 11:04a) 520/3

SC Roger. I'll continue with the balancing.  
I'm wondering about the capability of maybe overshooting  
about 1 percent with tank 1.

CAPCOM Roger.

PAO This is Apollo Control, Houston. The  
spacecraft control system attitude test is continuing and  
we've been advised that we've had partial restoration of  
service on our data network. It is not yet fully up, but  
we have one or two circuits that have been restored to use.  
We'll keep you advised. Here's more conversation through  
Carnarvon.

CAPCOM The RCS firing as we went through peri-  
gee.

SC Can not say.

PAO And that wraps up the conversation by  
Carnarvon. We'll acquire Guam in 4 minutes. Apollo Control,  
Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16917 (CDT: 11:20a) 521/1

PAO Apollo Control here, 169 hours, 17 minutes into the flight. We are talking to the crew by Guam and we will cut in on that conversation in just a minute. First, I want to make clear that all data circuits have been restored. We advised earlier that we lost our data circuits - our ground data circuits at elapsed time of 168, 56 minutes. Within about 15 minutes, all circuits had been restored. And much of that 15 minute outage was due to the testing on the alternate routing circuits that were brought up when we lost - when we had the data dropout. The trouble has been traced immediately to three major system failures in the Kansas area. It's no better defined than that, but apparently in the Kansas area there were three major failures in a very short period of time about 40 or 50 circuits, and those are circuits other than the NASA circuits, were involved. Alternate readings are available for all those circuits and they were routed very quickly. As I say, to recap, we have full restoration of our data circuits now, and we are in touch with the spacecraft by Guam.

CAPCOM Apollo 7, Houston through Guam.  
SC Roger; loud and clear.  
CAPCOM Roger. Wally, we -  
SC We are getting worried about all the paper work; it's accumulating on our list; preparing for this mission.  
CAPCOM Roger. Wally, we have a State vector update at - a DAP update we would like to send you; would you go to accept?  
SC Got it.  
CAPCOM Coming up.  
CAPCOM And Walt, I have the NAV check pad to read, whenever you are ready to copy.  
SC What time is perigee; I have it written as 44.  
CAPCOM Okay, Wally, that's about right.  
SC (garble)  
CAPCOM Okay, the NAV check - GET of 175 plus 30 plus 0000 plus 2562 plus 09300 1407.  
SC Roger; 175 30 0000 plus 2562 plus 09300 1407; over.  
CAPCOM Roger; that's correct.  
CAPCOM And Walt, I have - I would like to read you up the verification of the DAP data load we are passing you.

APOLLO 7 COMMENTARY, 10/18/68, GET: 16917 (CDT: 11:20a) 521/2

SC Roger; we can read it right back to you.  
In a minute.  
SC Is that the update?  
CAPCOM Negative.  
SC (garble) Go ahead with the DAP update  
Jack.  
CAPCOM Okay, NOM 47 - I'll read you R1, R2 and R3.  
plus 00139. Plus 00455. Plus 24921. Down 48, minus 00078.  
Minus 00130. Plus 02412. Were you able to copy that?  
SC I didn't get the down 48. Did you say  
down 48?  
CAPCOM Okay - minus 3 balls 78, minus 2 balls  
130. Plus 02412.  
SC Update finished?  
CAPCOM Affirmative Walt. The computer here is  
  
SC Go on nav update?  
CAPCOM Say again Wally.  
SC Go on that update.  
CAPCOM Roger; copy that.  
CAPCOM And 7, when you can, would you switch  
your biomed's to LMP?  
SC (garble) break in part 2; they didn't  
leave it off. There's a broken wire on it - when I took  
a look at it.  
CAPCOM Roger; copy that.  
SC Should that program be second to the  
(garble)  
CAPCOM Stand by.  
SC We are running it through the (garble)  
and roll off the (garble) Probably won't get anything on  
my biomed Jack.  
CAPCOM Okay Wally, we feel that the computer  
will be finished with program 00 shortly and roger on your  
biomed data Walt.  
SC Down 47 and down 48 is go.  
CAPCOM Roger; copy that.  
SC Does everybody down there concur with  
letting hydrogen tank 1 get down about a 1 percent lower than  
tank 2?  
CAPCOM Inward Walt.  
SC Okay, perigee is at 45 now.  
CAPCOM Roger.  
CAPCOM Walt, we would like to balance these  
hydrogen tanks as close as possible to each other.  
SC Understand; I will stand by for your  
call; I show right now that they are getting pretty close,  
maybe 2 percent apart.

APOLLO 7 COMMENTARY, 10/18/68, GET: 16917 (CDT: 11:20a) 521/3

CAPCOM	We'll give you a call.
CAPCOM	And we are 1 minute LOS Guam; we'll pick
you up at Hawaii at	27.
SC	Roger.

END OF TAPE

PAO Apollo Control here, 169 hours 28 minutes  
 and we're in touch via Hawaii.  
 CAPCOM Apollo 7, Houston through Hawaii.  
 SC Aloha  
 CAPCOM Walt, could you tell me what omni antenna  
 you're on right now?  
 SC Omni C  
 CAPCOM Okay, for a comm test here and let us  
 know if you switch omni.  
 PAO Apollo Control here. The Network controller  
 just advised the Flight Director we are back 99 percent  
 full coverage now on our data and our voice line.  
 SC Hey, Jack, this is Walt. We took frames  
 37 and 38 of the (garble)  
 CAPCOM Rog, copy.  
 SC Magazine N. Jack, when can I put this  
 in opposite antenna?  
 CAPCOM Okay, we'll get you that, Wally.  
 SC Affirm We just had a torque there.  
 CAPCOM Okay, copy.  
 SC And if you've been reading our DSKY  
 you can see I'm pretty close to SCF.  
 CAPCOM Okay, I'll get back to you as soon as  
 I can.  
 SC okay, it starts torquing about  
 (garble) as you approach perigee, about 10 degrees before  
 perigee.  
 CAPCOM Okay, I copy.  
 CAPCOM Apollo 7, opposite omni, Wally, is it  
 starting to torque now?  
 SC Just a little bit. Why don't you let  
 me flip it over and then start hitting it pretty hard?  
 CAPCOM Okay.  
 SC I can actually feel the spacecraft working.  
 It's starting to torque now.  
 CAPCOM Okay.  
 SC Not as bad because of (cut off) why  
 don't we see if we can stick with it because she's riding  
 up the same way she would on inertial. Oh. (Garble)  
 CAPCOM Okay Wally, you can terminate the dead  
 band at anytime now depending on your thruster activity.  
 CAPCOM We've got an update at anytime now.  
 CAPCOM Apollo 7, Houston.

APOLLO 7 COMMENTARY, 10/18/68, GET: 16929 (CDT: 11:31a) 522/2

CAPCOM Apollo 7, Houston.  
CAPCOM Apollo 7, Houston  
CAPCOM Huntsville M & O, Houston CAPCOM.  
NETWORK Houston CAPCOM, Huntsville M & O here.  
CAPCOM Roger; are we going out down there?  
NETWORK Affirmative. Volt SCM, USB and VHF.  
CAPCOM Roger; thank you.  
CAPCOM Apollo 7, Houston.  
CAPCOM Apollo 7, Houston; you can terminate  
the min dead band attitude test at anytime now; we have an  
update.  
SC Roger; I'm going loose dead band for SPS.  
CAPCOM Roger; copy that.  
SC (garble) cycle on and 2 dead bands back to 8  
high.  
SC Houston, do you read Apollo 7?  
CAPCOM Roger 7; you are 5 by.  
SC Okay, do you see my GDC on number 1 ball?  
CAPCOM Where - we don't have telemetry over  
the Huntsville Wally.  
SC Okay, that's the third time; I just did  
it again. It flipped 180 degrees of pitch and it did it on  
number 2 ball; it's terminated its discrepancy alright.  
Attaching it to another real line of GDT.  
CAPCOM Roger. You say this exists just on the  
number 1 FTI?  
SC That's affirmative.  
CAPCOM Very good.  
SC I have number 1 and 2 on the (garble) fit.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16939 (CDT 11:41a) 523/1

CAPCOM Apollo 7, Houston.  
SC There we go, loud and clear.  
CAPCOM Roger.  
SC Okay, you got TM on me now?  
CAPCOM Affirmative.  
SC Okay, I'm on number 1 ball, IMU num-  
ber 2 GDC, with ORDEAL on.  
CAPCOM Okay.  
SC I'll put number 2 back to GDC, now  
can you see all this stuff? GDC on number 2 now and it  
powers right in. Now I'll put GDC on number 1.  
CAPCOM Okay, Wally, we can't see number 2  
ball data.  
SC Hey, that's number 1 right now, that  
is Sayonara.  
CAPCOM Okay.  
SC It's a (garble) on GDC.  
CAPCOM Okay.  
CAPCOM Walt, we've got a - we are approach-  
ing a heater cycle on tank 1. we would like to have you  
read out AC1, phase A, B, and C now and then during the  
heater cycle.  
SC Roger. Phase A is 114-1/2, B is 116,  
C is 114-1/2.  
CAPCOM Okay, and we will let you know, you  
don't have to watch it, we will let you know when the  
heaters come on, then you can read it out again.  
SC Roger. And what do you think about,  
when we terminate this SPS DTO and I won't suggest we do  
that any time. How about turning the heaters on AB posi-  
tion long enough to observe a temperature rise to be sure  
they are working.  
CAPCOM Okay, Walt. We are still discussing  
that down here. Tentatively, the answer is negative.  
SC Well okay, just trying to help.  
SC Jack, I think we are pitching up by  
holding inertial attitude, that evaporator would want to  
torque up, so I guess we can just hang in here in this  
perigee.  
CAPCOM Okay.  
SC It's just about going through the  
same window. We lucked out, we went right through SCS at  
the right time.  
SC Don't let Shaffer get credit for  
that whatever you do.  
CAPCOM (laughter) Roger.  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Walt, on your EKG problem, do you

APOLLO 7 COMMENTARY, 10/18/68, GET: 16939 (CDT 11:41a) 523/2

CAPCOM think you will be able to restore the harness today?

SC I don't know how I'm going to be able to restore it. We have taken a good look at the leads. I was told last night it was probably the external leads weren't connected to the readup. Wally took a look at them, it looks like we've got all the connections made. The only thing I can think of is a broken wire inside the lead someplace. Are you getting anything on me at all?

CAPCOM Just respiration, Walt.

SURGEON Jack, I would like to check with you. Do you know which external lead it is? We could change the tension, but that's about all. The wiring is intact.

CAPCOM Okay.

SURGEON All of it.

SC Okay, might give those people a good work on that mickey-mouse wiring. It is not up to the standards as far as durability is concerned, for 7 or 8 days.

CAPCOM Okay, Wally. They tell me that should work. Walt, they say you might try to make the same fix that Wally did on his.

SC Do you want to put his - what you want to do - you going to give your EKG up and keep respiration only?

CAPCOM Stand by, Walt.

CAPCOM Okay, Walt. They want to swap respiration for EKG leads.

SC You mean you want to swap the four connectors on the amplifiers, is that it? (garble) conditioners.

CAPCOM That's right.

SC Okay, we will do that. It may take a little while. If I can do it, I'll unhook the yellow ones. I've got - what? Yes, I've got enough wire here so that they might even reach. But if you could retool the deal with another wire here -

CAPCOM Copied that.

SC Houston Apollo 7

CAPCOM Go ahead.

SC (garbled) water chlorination system. We remarked on a discrepancy there last night. The container that holds the ampules we have traded places with the pen sponger that penetrates the water servicing valve. At any rate, there is a brown fluid all around the system. (garbled) (cut out)

CAPCOM Apollo 7 Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 16949 (CDT 11:51A) 524/1

CAPCOM Apollo 7 Houston,  
SC Roger, did you read all right?  
CAPCOM Negative, Wally, we got a handover  
just about that time. Before we continue could we - we got  
a report that the heater is on. Could you read out your  
AC 01 phase A, B, and C again?  
SC 113 and a half, 115 and a half, 114 and  
a half.  
CAPCOM Roger, copy that.  
SC Are you getting (garbled) now?  
CAPCOM And Wally, we got pretty much the same  
report on the chlorination system now. Have there been  
any changes from last night?  
SC Negative, we're just about (garbled) in  
that that loop seems to be rocking with (garbled)  
CAPCOM Okay, we copied that.  
SC That fitting in the water system was  
scheduled for chlorine later today.  
CAPCOM Okay, we copy that.  
PAO This is Apollo Control Houston here  
169 hours 51 minutes. Schirra's last transmission has triggered  
a little discussion here in the Control Center about this  
brown fluid as he described it, at the connection point or  
at the neck of the - leading into the water container. It  
was described also earlier in the day on the swing shift very  
similarly to the description we just heard. Our best guess  
is that it is an oxidized lubricant from somewhere, and  
apparently the person making this diagnosis of oxidized  
lubricant has more specific information on it because they're  
also sure it's non-toxic. In other words it wouldn't make  
any difference, any physical difference to the water, although  
apparently it's none too appetizing looking. The main  
question in the minds here is why don't the crew simply wipe  
the brown stain away. It's doubtful that we'll get any more  
comm through Antigua. The surgeon just advised that we did  
not have, to the best we know, there was no similar occurrence  
during our chamber test here in Houston called 2-TV1, which  
is a long term run of the command module in our big vacuum  
chamber. This will trigger a lot of checks and cross checks  
I'm sure throughout the center here and the contract plant  
in California. At 169 hours 53 minutes into the flight,  
this is Apollo Control Houston.

END OF TAPE

PAO This is Apollo Control, Houston, 170 hours 11 minutes into the flight. A few minutes ago before we left the Antigua area of acquisition the crew came back up and made some additional comments on this brown fluid, which occupied the later part of that pass. Here's that conversation and then we will bridge right into the Ascension acquisition.

CAPCOM Apollo 7, Houston.

SC Roger.

CAPCOM Wally, we had a premature data LOS there. Could we get you to go your up telemetry command switch to reset to normal?

SC I would like to restate on the chlorination that we find that every other day is satisfactory we have no objection to that.

CAPCOM Okay, copy that. Wally, do you think that you could wipe off this brown spot?

SC I wish we could. I'm not sure what it is though that's why (cut off)

CAPCOM Okay.

SC That's what I would do in my own home, but I'm not sure about the correct input in this biomedical log. There's really nothing for it in my book up here. If we wipe it off, who is going to get a chance to take a look at it afterwards to see what it was (garble)

CAPCOM Apollo 7, Houston, through Ascension.

SC Yes, This is Apollo 7, How do you read me?

CAPCOM Roger, Walt. Standing by.

SC Can you check your log and find out what time I turned the H21 burner H22 heater off this mornig?

CAPCOM Will do.

CAPCOM Apollo 7, Houston. Rog the best data we had there was 167 plus 53.

SC Thank you, and what are the readouts now on H21 and H22 quantities?

CAPCOM Including 9.4 Walt, and 37.6.

SC Okay, they seem to be coming apart. If that's a little bit to slow I can turn the fans off in tank 2. Just fix it up occasionally.

CAPCOM Just hold what we got Wall.

SC Okay.

CAPCOM Apollo 7, Houston, 1 minute LOS Ascension. Tananarive at 170 plus 20.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 17020 (CDT 12:24p) 526/1

PAO This is Apollo Control, here at 170 hours  
20 minutes. We should acquire via Tananarive. Let's listen.  
CAPCOM Apollo 7, Houston, through Tananarive,  
standing by.

PAO The flight directors advise we may get  
some comments on the cold soak tests as we pass through  
Tananarive. I think we'll probably determine by the  
quality of the communications circuit through that station  
today. We're standing by.

This is Apollo Control. We don't expect  
any communication via Tananarive, so we'll take the line  
down now.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 17048 (CDT: 1:51p) 527/1

PAO This is Apollo Control at 170 hours, 48 minutes into the flight. We are about to acquire through Guam but one additional word on that power outage which now has been,- or the data outage we recorded earlier. At that time it was indicated the trouble was somewhere in the middle west, Kansas was mentioned on the loop. The network flight controller has tracked it some more, and the trouble was traced to a place called Pinsboro, West Virginia, a major outage in a large carrier and routing immediate - immediate re-routing had to take place and it takes some minutes to test out and validate the alternate circuits to be used. Don Eisele is well into his sleep period and we are now in touch with the spacecraft by Guam.

SC (garble) now.

SC Houston; Apollo 7 standing by.

CAPCOM Roger Apollo 7; Houston.

SC Not gonna try you any more.

CAPCOM Roger. Relative to Walt's question on the SPS heater after the cold soak test, we do not, do not want to activate these heaters; we want to look at the data first.

SC Understand.

CAPCOM And Wally we would like to do a fuel cell 02 purge at 171 plus 30.

SC Hey Jack, how are you reading my biomed now?

CAPCOM Stand by Walt...Walt, you did good work. We have good biomed data.

SC All of it, or just EKG's or what?

CAPCOM Just EKG.

SC Is my heart still pumping?

CAPCOM Affirmative.

SC I feel relieved. That leaves nothing to work with long either just talk right across the (garble)

CAPCOM Roger.

SC Do you have any more words of wisdom on the cord ejector?

CAPCOM Stand by Wally.

SC We aren't scheduled to use it tonight anyway, but just tighten up that one for awhile.

CAPCOM Apollo 7, Houston.

SC Go.

CAPCOM Wally, we are expecting to chlorinate tonight since we didn't do it last night but relative to the brown spot, we are trying to get more data on that to pass up to you.

SC I checked my log - I think I did last night and there's where we got the brown spot.

SC Yeah, last night we did chlorinate.

APOLLO 7 COMMENTARY, 10/18/68, GET: 17048 (CDT: 1:51p) 527/2

CAPCOM Say again Walt.  
SC We chlorinated last night at 150 hours  
approximately.  
CAPCOM Okay.  
SC We'll give you a lot of lead time on the  
problem.  
CAPCOM Roger; thank you.  
SC We can check with any other equipment you  
like.  
CAPCOM Okay, Wally, we concur with your chlori-  
nation; we won't chlorinate tonight.  
SC Roger. You just might play games with  
one of those ejectors and see what the heck it is down there.  
CAPCOM Good idea.  
SC It's between the ejector and the - deal  
that hooks up with the spacecraft; there's a pin in it.  
CAPCOM Okay.  
SC I chased it. The place where the small  
end of the chlorine and fuel is pierced; that's where the  
brown stuff collects.  
CAPCOM Roger; copy that.  
SC Very good.  
SC We are LOS 48 hours; we are at 24 hours  
now.  
PAO Apollo Control here. Watching this data  
coming in from Guam, you heard Walt Cunningham acknowledge  
that he was reassured that we were showing a heartbeat for  
him - and the heartbeat is about 68, the mean heart rate  
is about 68.  
CAPCOM Apollo 7, Houston.  
SC Go ahead Jack.  
CAPCOM Walt, sometime at your convenience, we  
would like a command module RCS temp readout.  
SC Roger; I'll get that shortly.  
CAPCOM Apollo 7, opposite OMNI.  
SC Roger; we are steady now.  
CAPCOM Roger.  
SC Okay - 5A - 50 - 5D - 50. 60 50, 6B;  
50, 6A, 50.  
CAPCOM Roger; copy those all.  
SC Jack what's the cutoff on this cold soak  
test - have we reached it?  
CAPCOM Wally, it's about 17110.  
SC Okay.  
SC That's the same cutoff we had - it was  
started later than original.  
CAPCOM Okay, there's a correction Wally. It's  
171 plus 22, because we started late.

APOLLO 7 COMMENTARY, 10/18/68, GET: 17048 (CDT: 1:51p) 527/3

PAO And that will wrap up the communication  
by Guam at 170 hours, 57 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 17105 (CDT 01:07p) 528/1

PAO This is Apollo Control, Houston, 171 hours 05 minutes into the flight. Momentarily we should acquire through Hawaii. There goes the first call.

SC We report all quiet here.

CAPCOM Roger. Donn, when you go to power down today, just as a reminder, don't forget to deactivate that damp.

SC Got that. We've got that on the rack. We know how to do that stuff.

CAPCOM Roger. We were just worried about a jet pyro.

SC Roger. The double 110 is now collecting conversation on the lower edge - the edge nearest the grid cell. There's - oh some large specks as long as 3/8 of an inch and about an eighth of an inch wide on it. Most of the specks are about a 32nd of an inch in diameter. A lot of dust collection on the outer surface of the inner pane and the condensation is on the inner surface of the outer pane. The little specks are from the dump system on the outer surface of the outer pane. Number 2 window has the sun on it now and the smoke on that I don't think has increased any, but we originally reported that's probably from power jettison. Guess the window looks quite good. Number 3 window, the hatch window, there are so much clouds today it looks smoothed over. We'll circle it out - 2-1/2 inches in diameter and the same crystal structure - this is all collected on the inner surface of the outer pane. That's a very bad show on that window. Number 4 window is about the same as number 2 and number 5 window, the side window, is also collecting condensation on the inner surface of the outer pane, but don't have the dump particles collecting on it.

CAPCOM Okay, Wally, that was a real fine window status.

SC We've entered in our log that beards are no good. Did you copy that?

CAPCOM Say again, Wally.

SC We've entered in our logs that beards are no good.

CAPCOM I couldn't read it.

SC We've entered in our log - our flight plan log - that facial beards are no good.

CAPCOM I copied that.

SC At 7, we're 21 hours and 22 minutes - we might as well start you boys cracking on figuring how much fuel we have left and get our Delta for these 2 GTO's.

CAPCOM Okay, Wally.

APOLLO 7 COMMENTARY, 10/18/68 GET: 17105 (CDT: 1:07p) 528/2

SC Roger.  
SC And we noticed a gross change in temperature; it looks like it's going up.  
CAPCOM We concur.  
SC The SPS propellant tank temperature is now reading 68.  
CAPCOM Roger.  
SC Jack how about a hydrogen 1 quantity and hydrogen 2 quantity.  
CAPCOM Okay, Walt. The hydrogen 39.0, 37.2.  
SC Roger; pitch rate (garble)  
SC We estimate 4 more days.  
CAPCOM I read you; copy that.  
CAPCOM Hey Wally; a couple of quick questions on the FTI problem that you had back. Did FTI flip occur with the ordeal and GDC operating on ball number 1?  
SC (Garble) you know that FTDC and we'll see how long it lasts.  
CAPCOM Okay, Wally, your answer started just at the handover to the hot soak, could you say again?  
SC Yes, GDC on ball 1. We're doing a leak.  
CAPCOM Was ORDEAL and GDC operating at the same time on ball 1?  
PAO The flight plan indicates the crew should be now powering down the guidance and navigation system, they'll also power down the spacecraft into the control system, stabilization and control system. The next item at 171 hours and 30 minutes calls for a purge - an oxygen purge of the fuel cells. We're going through the noisy area of the ship Huntsville at this point. Guaymas should pick up momentarily. And the guidance and navigation order happily reports that we're ten feet above our red line in the quad area on propellant. Let's listen some more as we move down off the west coast of Mexico through the Guaymas circle.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 17115 (CDT 1:17P) 529/1

CAPCOM Apollo 7 Houston  
SC Roger.  
CAPCOM Roger. Wally, here is a chart value  
for your RCS fuel.  
SC Go ahead.  
CAPCOM Roger, 614 quad A is still the limiting  
quad, but still above all RCS red lines.  
SC Very good.  
CAPCOM And Walt, could you give us a rad C  
readout when you have a minute?  
SC 36.2  
CAPCOM Roger, copy, and your hydrogen imbalance  
is improving now. We've gone from 3.4 to 1.8 difference.  
SC Roger.  
CAPCOM Wally, I missed some of the answers to  
the questions I asked about the DFT problem you had. Did  
this 180 degree flip occur when the RDL and the GDC were on  
ball number 01?  
SC Negative. I've now got a (garbled).  
You've got that (garbled) all up on the board. I'll give  
(garbled) Do you read?  
CAPCOM We aren't getting the data right now,  
Wally.  
SC You are, or are not?  
CAPCOM Negative, we've got a low antenna angle  
here at Guaymas.  
SC I'll hold on a second.  
CAPCOM Okay, Wally, it doesn't look like we  
are going to get any data at all here at Guaymas because of  
the keyhole.  
SC I've got about a 172 pitch, looking to  
a FDI on number 01, and the ball slips right over to about  
022 pitch, so I can't seem to get GDC to lock on ball number 01.  
CAPCOM Okay.  
SC That's fine on number 02.  
CAPCOM Does this flip occur just at the time  
that you're switching GDC 2 ball number 01?  
SC That's correct.  
CAPCOM Okay, copy.  
SC (garbled) How does it look, Jack?  
CAPCOM Okay, we're just about to lose you at  
Guaymas, we'll pick you up at Tananarive at 56.  
SC Roger  
PAO And that will wrap up the conversation  
for the Guaymas pass. At 171 hours 20 minutes into the  
flight this is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 17156 (CDT 02:00p) 530/1

PAO This is Apollo Control Houston at 171 hours 56 minutes. Tananarive should acquire momentarily and we will get an update for - a planned landing area update. No other activity is scheduled. Actually, that update may come later, during the Hawaiian crossing. More than likely, just a check in and a stand by call, as the spacecraft and the Control Center are sort of powering down after the day's work. We will keep the line open and see what develops.

CAPCOM Apollo 7, Houston through Tananarive.

CAPCOM Tananarive M&O, Houston CAPCOM.

TAN Houston CAPCOM, Tananarive M&O.

CAPCOM Roger. Are we going out down there?

TAN Affirmative, you are.

CAPCOM Thank you, sir.

PAO Well, from all appearances, we are

not going to put any calls into the spacecraft, so we will just take down the line. At 171 hours 59 minutes, this is Apollo Control Houston.

BND OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 17222 (CDT: 2:18p) 531/1

PAO This is Apollo Control, at 172 hours,  
22 minutes into the flight. By the ship Mercury, in the far  
west Pacific, we have just acquired the spacecraft.  
SC Garble  
CAPCOM Apollo 7, Houston through Mercury.  
SC Roger; ready.  
SC Hey Jack I would like to get a flight  
plan update when they plan on debating the primary water  
boiler and for how long.  
CAPCOM Okay, Walt. Walt, here are some red lines  
I used on your RCS that you might be interested in.  
SC Red lines are up.  
CAPCOM Your RCS redlines - in SDS deorbit, we  
used 58 pounds as the redline, your DAP redline is 487, and  
your hybrid redline is 252.  
SC Thank you.  
CAPCOM Don, -  
SC This is Apollo 7; over.  
CAPCOM Go ahead Apollo 7.  
SC I could give you a status report of the  
remaining film we have onboard?  
CAPCOM Okay, go ahead.  
SC First the 70 mm. Pan X; we have 121  
frames remaining. SO 368, 20 frames. SO 121, 48 frames.  
By the 16 mm, on the 368, there is 2 and one third magazines,  
and the 168, there is 4 magazines; over.  
CAPCOM Copy that Walt.  
SC I am standing by for -  
CAPCOM We'll be back with you in a minute on  
that - evap.  
CAPCOM Walt, we'll get back to you at the  
Guaymas circle on the primary evaporator.  
SC Roger.  
CAPCOM Apollo 7, Houston. We are about to  
lose you at Guam. Hawaii at 40.  
SC Roger Jack.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 17242 (CDT 0245p) 532/1

PAO Apollo Control, 172 hours 42 minutes,  
via Hawaii we're having this conversation.

CAPCOM Apollo 7, Houston, through Hawaii.

SC Got you, Jack.

CAPCOM Roger. Wall, I have your block data  
number 19.

SC Houston, Apollo 7, do you read?

CAPCOM Roger, 7, we've got your block data,  
are you ready to copy?

SC Ready to copy, go, I'm loaded with  
blocks now.

CAPCOM Roger. 111 dash 3 alpha plus 295 plus  
1389. 175 plus 17 plus 19, 280 (cutout) charlie charlie plus 195  
plus 1520 177 plus 00 plus 44 2680, 113 dash alpha charlie  
minus 025 minus 0090 177 plus 42 plus 42 5628, 114 dash  
alpha charlie plus 025 minus 0239 179 plus 14 plus 47 5297,  
115 dash alpha charlie plus 122 minus 0310 180 plus 48 plus  
41 4637, 116 dash 2 alpha plus 243 minus 0269 182 plus 26  
plus 21 3648 end.

SC Forgot 164. Okay, read back follows:  
111 dash 3 alpha plus 295 plus 1389, 175 plus 17 plus 19,  
2808, 112 dash 3 charlie plus 195 plus 1520 177 plus 00 plus  
44 2680, 113 dash alpha charlie minus 025 minus 0090 177  
plus 42 plus 42 5628, 114 dash alpha charlie plus 025 minus  
0239 179 plus 14 plus 47 5297, 115 dash alpha charlie 122  
minus 0310 180 plus 48 plus 41 4637, 116 dash 2 alpha plus  
243 minus 0269 182 plus 26 plus 21 3648 over.

CAPCOM Roger. On the second block, Walt, that's  
112 dash charlie charlie.

SC Roger. 112 dash charlie charlie and  
tell John hello and I've got a whole book full of unused  
blocks here now.

CAPCOM Copy that. Okay.

CAPCOM Apollo 7, Houston.

SC Go ahead, Jack.

CAPCOM Okay Walt, you're pretty weak, but on  
your question on the primary evaporator, we would like to  
return the primary evaporator to auto.

SC Going to auto now, shall I bring it in  
to operations as we've been doing before, I'll go ahead and  
bring it on the line as we have been.

CAPCOM Okay, Walt, if you'll just place that  
primary evaporator on auto it'll cycle by itself and we're  
expecting a cycle sometime tonight.

SC Is this something that somebodys  
dreamed up after all these months, I've been told that you

APOLLO 7 COMMENTARY, 10/18/68, GET: 17242 (CDT 0245p) 532/2

SC can not reservice the secondary evaporator.

CAPCOM That is correct and we've come up with a procedure to do it.

SC I don't know how I'm going to get so smart in one weeks time, but I'll go ahead and copy. How long is it?

CAPCOM Oh, four steps.

SC Very long steps.

CAPCOM No, real short.

SC Hit me with it.

CAPCOM Okay, you want to turn the evaporator water control switch secondary to auto.

SC That's where it is anyway, isn't it?

CAPCOM Then you want to turn your secondary coolant loop of that switch to evap for five plus or minus one seconds.

CAPCOM Rog, you copy that Walt.

SC I got evaporator water control secondary to auto which is where it normally is, but it's running, I go to the evap position for five seconds and reset, I assume immediately afterwards, is that correct?

CAPCOM Affirmative, five plus or minus one seconds, then reset for plus or minus one second. Okay, then repeat this - this step above for forty - for a recommended forty cycles.

SC How many times do I do that?

CAPCOM Rog, forty cycles is the desired, but twenty cycles is the minimum number needed to bring the evaporator on the line, it'll give you three tenths of a pound, twenty cycles will.

SC garble - will go on record here saying that people that dream up procedures like this after you lift off have somehow or another been dropping the ball the last three years, if they hadn't (garble) Gemini (garble) looks kind of Mickey Mouse, but I'll do it if I have to.

CAPCOM Okay, we just wanted to get you thinking about it in case you needed it.

SC What, did you read me then?

CAPCOM Affirmative, Walt.

SC Okay, I'll do this Mickey Mouse procedure if necessary, but not until LOS when we've stayed a lot further with flight plan.

CAPCOM Okay, we've got it, we're about to lose you over the Huntsville, Walt, we'll pick you up at Tananarive at 32 - 173 plus 32.

PAO This is Apollo control at 172 hours 51 minutes and we'll bid good-bye to Apollo 7 for the afternoon.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 17309 (CDT 3:15P) 533/1

PAO                      This is Apollo Control at 173 hours 09 minutes. We're still about 23 minutes from our next acquisition of the spacecraft at the Tananarive tracking station. At the present time here in the Mission Control Center we are in the midst of a change of shift. Flight Director Gene Kranz will be coming with his white team to replace Flight Director Glenn Lunney and the black team and we anticipate that Ron Evans will be coming on shortly as CapCom to replace Jack Swigert at 273 hours 09 minutes. This is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 17408 (CDT 410p), 534/1

PAO This is Apollo control at 174 hours 08 minutes into the mission, during our press briefing the spacecraft completed two passes, one over the Tananarive station and we've just completed a pass over the tracking ship Mercury. We had no communications with the spacecraft over Tananarive, we put in a call to the crew and stood by, there was no conversation there, there was a brief bit of conversation over the Mercury and we passed up some information to Wally Schirra on reconnecting some biomedical instrumentation leads which probably have come undone and we'll play the Mercury pass back for you now in its entirety.

CAPCOM Apollo 7, Houston, through Mercury.  
SC Roger, loud and clear.  
CAPCOM Roger, loud and clear.  
SC Ron, would you check my biomed signal when I'm on please.  
CAPCOM Roger, coming through good.  
SC Thanks, would you check the oxygen, will you?  
CAPCOM Roger, O2 manifold pressure now 106.  
SC 106, Roger.  
CAPCOM Now it's 102.  
SC 102, we're at go.  
CAPCOM Roger.  
SC Go ahead.  
CAPCOM Roger, you might tell Walt that his spark plug changer has some information here when he gets a chance to trouble shot his biomed.  
SC (garble). He's got a good chance, because he's got his hood open now.  
CAPCOM Roger, we'd like to confirm that the yellow lead is connected to the blue signal conditioner at this time.  
SC Okay, it's not hooked up right now. Yellow lead to blue conditioner and Donn Eisele has the same break I have in his manifold.  
CAPCOM Roger.  
SC So he'll rig it up the same way I am.  
CAPCOM That's fine. If Walt has the yellow to the blue conditioner we would like to disconnect the side sensors at the pin connectors and then connect the yellow lead to the upper and lower chest sensors.  
SC Okay, and I just disconnect the (garble) over the auxillary.  
CAPCOM That's affirmative, disconnect the auxillary.  
SC I can already remove those sensors then (garble) is going to disconnect them.

APOLLO 7 COMMENTARY, 10/18/68, GET: 17408 (CDT 410p), 534/2

CAPCOM Affirmative, and even also (cut off)  
SC two externals and run them through the  
yellow, pin to the blue conditioner.

CAPCOM That's affirmative, yes.  
SC Okay, will do. We'll change (garble)  
today.

CAPCOM Roger.  
CAPCOM Apollo 7, Houston, 30 seconds LOS

Hawaii at 16.  
SC Roger, we'll (garble) test your spark  
plugs.

CAPCOM Roger.  
PAO That is all the communication we had  
with the crew over the tracking ship Mercury we'll be  
acquiring again at Hawaii in about 5 minutes. This is  
Apollo control at 174 hours 12 minutes into the flight.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 1741600 (CDT 4:20P) 535/1

PAO This is Apollo Control at 174 hours 16 minutes. We're standing by for CAPCOM Ron Evans to put in a call to the crew over Hawaii.

CAPCOM Apollo 7 Houston through Hawaii.

SC Roger, loud and clear.

CAPCOM Roger.

CAPCOM Apollo 7 Houston.

SC Come in.

CAPCOM Roger. Is the urine dump heater still in main A?

SC That's affirmative.

CAPCOM Roger, and which switch on the accumulator is now in operation?

SC Number 1, wait just a second, uh Number 1, yeah.

CAPCOM Roger.

SC (garble) dump A line (garble) of my concern.

CAPCOM Roger. It kinda bounces up and down here on the temperature and on the thing, we're just watching it - we're curious which one has been working.

SC A only.

CAPCOM Roger.

SC Any new news back that way?

CAPCOM Roger, I've got a man working on it now.

SC Okay.

CAPCOM Apollo 7 Houston, request 02 tank 2 fan cycle on for 5 minutes and up.

SC Okay.

SC (garble) connections to try a new fix. We'll give it to you, uh, give you the data.

CAPCOM Say, it again.

SC Rog. Walt's hooked up. You can try him for an EKG, or whatever it is.

CAPCOM Roger. We're looking at it.

SC Ron, ask Mr. John if we can move the upper sternal down about an inch to remove the strain on the lead?

CAPCOM That's affirmative.

SC Okay. What's the reading on the (garble) then?

CAPCOM Roger. It's not looking very good yet. We'll check it again at Ascension.

SC Okay, that's the two sternal leads on the yellow pin connector to the blue signal conditioner.

CAPCOM Roger.

SC Okay.

CAPCOM LOS. We'll pick you up at Ascension at five seven.

APOLLO 7 COMMENTATOR, 10/18/68, GET: 1741600 (CDT 4:20P) 535/2

SC Roger, five seven, Ascension.  
PAO This is Mission Control. During that pass, as you heard, we checked out the biomedical information from Walt Cunningham's sensors, and apparently are still not getting good data here in Mission Control. The medic reports that the data looked kind of erratic, and we'll check it again on our next pass, which will be over Ascension. At 174 hours 23 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 1745800 (CDT 5:00P) 536/1

PAO                    This is Mission Control Houston. We  
have put in a call to the crew over Ascension. Let's listen  
in for that conversation.

CAPCOM                Apollo 7. Houston. Through Ascension.  
Standing by.

PAO                    This is Apollo Control at 175 hours  
05 minutes and apparently we are not going to have any com-  
munications with the crew over Ascension. We're scheduled  
to acquire at Tananarive in about 5 minutes. We'll come back  
up for that pass.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 17512 (CDT 515p) 537/1

PAO This is Apollo control at 175 hours 12 minutes, we're standing by to acquire the spacecraft over Tananarive.

SC garble.

CAPCOM Rog, read you loud and clear.

SC garble.

CAPCOM And that didn't come through.

SC Roger, (garble) with us.

CAPCOM Roger, copied that.

SC Ron, ready.

CAPCOM Affirmative, GO.

SC Hey Ron, can you give me on hydrogen

tank one (garble).

CAPCOM Roger, H2 tank one 37.4, H2 number 2

36.8.

SC Come to think of it, give Donn a (garble)

CAPCOM Apollo 7, Houston, say again.

SC Give Donn a call (garble) have him

turn both heaters from the hydrogen tanks to auto.

CAPCOM 30 seconds LOS - we will call Donn when

they get balanced, Mercury at 33.

SC Roger.

PAO This is Apollo control the spacecraft will be going out of range of the Tananarive station shortly and we had somewhat garbled communication along that pass of the spacecraft relatively low on the horizon and it seemed from the tracking antennas at Tananarive, we'll be picking them up again at the Mercury in about 19 minutes from now. Within the - the next 15 or 20 minutes Wally Schirra and Walt Cunningham are scheduled to begin their sleep periods and command module pilot Donn Eisele is scheduled to be ending his. This is Apollo control at 175 hours 16 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 17534 (CDT 540p) 538/1

PAO This is Apollo control at 175 hours 34 minutes, the spacecraft now approaching the tracking ship Mercury, in the western Pacific, we should be hearing from command module pilot, Donn Eisele shortly. Donn is scheduled to end an eight hour sleep period at this time. We'll stand by for that call to the crew.

CAPCOM Apollo 7, Houston, through Mercury standing by.

SC Roger.

CAPCOM Roger, loud and clear.

PAO That sounded like Donn Eisele to us which would indicate commander Wally Schirra and lunar module pilot Walt Cunningham have begun their scheduled eight hour sleep period or will begin shortly.

SC Houston, Apollo 7.

CAPCOM Houston, GO.

SC Roger, this is the CMP up now and I'd like to give you a little status report.

CAPCOM Roger.

SC Okay, first of all, starting last night when I went to sleep about 168 hours, it allowed me 30 clicks of water, 2 aspirin and 1 lomogel.

CAPCOM Roger.

SC The LMP wants to add 30 clicks of water wishes to announce that he is now pure in sleep with clean skivvies on.

CAPCOM Beautiful.

SC The CDR is - the CDR is recording 20 clicks of water and wishes to announce that he has his back up up backs on also.

CAPCOM Roger.

CAPCOM Now one minute LOS at Redstone at 05.

SC Today, Ron, you got any hot news for us.

CAPCOM Roger, the paper said your SPS burn was the mightiest maneuver ever made by a manned spacecraft.

SC That's right.

CAPCOM Yea. - The stock market is at its highest level since February of 66.

PAO And with that we appear to have lost communications with Apollo 7, we're scheduled to reacquire the spacecraft in about 30 minutes over the tracking ship Redstone in the south Pacific. You heard Donn Eisele report on the status of the crew at the present time continuing to keep up on the water intake and the lunar module pilot Walt Cunningham and Wally Schirra, commander have apparently changed into their back up pair of constant wear garments or Wally called them his back up up backs. This is Apollo control at 175 hours 42 minutes.

END OF TAPE

APOLLO7 COMMENTARY, 10/18/68, GET: 1760600 (CDT 6:10p) 539/1

PAO This is Apollo Control at 176 hours and 6 minutes into the mission. We're preparing to contact the spacecraft at this time over the tracking ship Redstone in the South Pacific. Over that - over our last pass over the tracking ship Mercury telemetry information showed that our orbit has presently 243.1 nautical miles for a high point with a perigee of 89.8 nautical miles. We'll listen now as CAPCOM, Ron Evans, prepares to put in a call to the crew.

CAPCOM

Apollo 7 Houston through Redstone.

SC

Roger, Houston

CAPCOM

Roger. Say, Donn, on all of our discussion on the Delta V meter there today you are in a mess with the counter. We never did get a residual EMS Delta V after the burn today, do you happen to recall what that was?

SC

I'm sorry, sure don't, Ron. We couldn't see it very well, it was so bright in here that the Delta V didn't show up very well.

CAPCOM

Roger

SC

Hey, Ron, could you give me an orbital backup date please and also find out how much difference the period is between our orbit and the one that was (garbled) around the orbit map.

CAPCOM

Wilco, Donn. Apollo 7 Houston opposite omni. Apollo 7 Houston, I have a map update for you.

SC

Roger, go ahead.

CAPCOM

Roger, rev 111, GET 175 plus 15 plus 00,

longitude 41.4 East

SC

GET 175 plus 15 plus - -

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 17614 (CDT 615p), 540/1

CAPCOM Affirmative, 41.48.  
SC Okay. Did you find out about the orbit?  
CAPCOM Roger, we're working on it, the period  
is 90 something, let me look it up here - the period is 90  
plus 42 now.  
SC Roger 90 plus 42.  
CAPCOM Affirmative.  
SC I see, i don't know what it is on this  
map. I guess I can figure it out.  
CAPCOM We'll get the information for you and  
Donn did you get the fix on the biomed harness that we  
passed up for the rest of the guys.  
SC Oh, yea, to switch the plug to the other  
side.  
CAPCOM Affirmative.  
SC Yea, I did get that, I haven't done  
it yet, I will in a little bit.  
CAPCOM Roger. - Apollo 7, Houston 30 seconds  
LOS Ascension at 31.  
SC Roger.  
CAPCOM And 7, Houston, your map is a 90 minute  
period.  
SC Say again.  
CAPCOM 90 plus 00 period, on your map.  
SC Roger, I understand, thank you.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 1763100 (CDT 6:35P) 541/1

PAO This is Mission Control, Houston at  
176 hours 31 minutes. Apollo 7 is just entering darkness  
now and coming up on the tracking station at Ascension.  
CAPCOM Apollo 7 Houston through Ascension, stand-  
ing by.  
SC (Static)  
CAPCOM Roger.  
SC (Garble) Houston.  
CAPCOM Say it again, Donn.  
SC How's the weather there?  
CAPCOM Roger. The weather is beautiful.  
SC (garble) there's a beautiful (garble) up  
here over (garble). I don't know which one it is but it sure  
did take.  
CAPCOM Roger.  
SC May be (garble)  
CAPCOM We'll check, and let you know.  
CAPCOM 7 Houston, the Doctors say thank you.  
SC That's what he wanted, Aye?  
CAPCOM Affirmative.  
CAPCOM Apollo 7 Houston, opposite OMNI.  
SC Roger.  
SC Houston, Apollo 7.  
CAPCOM Houston, go.  
SC Roger. A couple of days ago we did a  
E23 star to lunar landmark exercise. I just wonder if the  
data got down to the ground, and if they were happy with it?  
We only got a chance to do one or two and I didn't know how  
they came out.  
CAPCOM Roger, we'll check it.  
SC Thank you.  
CAPCOM Ron, we were going to get the SCS and  
G&N control mode checks and Donn's awake now. We've got a  
couple of minutes. It might be worthwhile to try and get  
that one done. Find out what he has completed from his log.  
CAPCOM Apollo 7 Houston.  
SC Read you.  
CAPCOM Rog. Have you had a (There is an echo  
on the tape and you can't understand)? Have you had a chance  
to give us a rundown on the SCS and G&N control modes. How  
many you have completed?  
SC Yes, stand by. That's right. I owe you  
that from yesterday.  
CAPCOM Roger.  
CAPCOM 7 Houston, about 1 minute to LOS. Venus  
is fairly close to scorpio at this time.  
SC Oh it's Venus?  
CAPCOM Roger.  
SC Okay, that's when it's spring.

APOLLO 7 COMMENTARY, 10/18/68, GET: 1763100 (CDT 6:35P) 541/2

SC Ron, I'll give you this rundown when  
we come over the next station, okay?

CAPCOM Roger.

CAPCOM It will be Mercury at zero 9.

SC Roger.

PAO This is Mission Control. We've lost  
contact, now, with the spacecraft over Ascension. A relatively  
long pass that time accounted for by the fact Apollo 7 is  
at it's, or near it's apogee of 240 nautical miles at this  
point. The next station to acquire will be the tracking ship  
Mercury, and we'll pick up there in about 28 minutes. The  
thank you that you heard passed up from the Control Center  
to Donn Eisele from the medics here, was in response to his  
successful repair of his biomedical instrumentation leads.  
We are now getting a good electrocardiogram data on Donn here  
in the control center. At 176 hours 43 minutes, this is  
Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 1771000 (CDT 7:15p) 542/1

PAO This is Apollo Control at 177 hours  
10 minutes. We've just acquired the spacecraft over the  
tracking ship Mercury. We'll listen for the call.

CAPCOM

Apollo 7, Houston, Mercury standing by.

SC

Roger, Houston, Apollo 7.

CAPCOM

Roger, loud and clear.

SC

Ron, I'm looking over this score card  
here on attitude control modes, and we've got 'em all checked  
off except for some of the various rates, particularly the  
high rate in automatic maneuver for G&N.

CAPCOM

Roger.

SC

If you like, I can go down the list  
for you. You want the details, or you just want a total  
score card.

CAPCOM

If you have time, we would like to go  
down the list. We're trying to figure out how much RCS fuel  
we need to allocate for the rest of them.

SC

Okay. With Agena control modes, Wally  
has checked off, or one of us did, max DEADBAND attitude  
holds for 20 to 30 minutes. I believe we did that in possibly  
T20 during rendezvous. Also the minimum DEADBAND we used  
during SPS burns which is attitude hold G&N.

CAPCOM

Roger.

SC

Automatic maneuvers, we do those -  
we do an automatic turn maneuver for every burn. It also took  
automatic maneuvers in T20 during rendezvous.

CAPCOM

Roger.

SC

Manual recommence has been used to trim  
the roll angles at, you know, just prior to last auto trim  
for a burn, and we may have used that at other places. I  
can't recall. I think we did during such things as that  
T23 tracking where we went down to hold for a little while  
and then back.

CAPCOM

Roger.

SC

We used the minimum impulse controller  
for that the sextant calibration and for T23. We used RCS  
translation control for the rendezvous, and it was a TTI  
burn. We used CMC 3 mode in three axis during the sextant  
calibration. We made automatic maneuvers at .5 and .10 degrees  
per second. We've also made manual maneuvers at those rates.  
Usually it takes place during re-entry burn cycle, say 5 to 10  
minutes before the burn when maneuvering the attitude or holding  
attitude.

CAPCOM

Roger.

SC

Okay, the SPS during the SPS cold soak  
we of course did the max DEADBAND, that fourth degree DEADBAND

with low rates. We used minimum deadband with low rate during rendezvous for attitude hold during braking, and line of site corrections. We use rate command at low rate during the same period for during rendezvous. We use minimum impulse and accel command right along. That's our standard maneuver modes, it's of this (broken) it's higher than any other rate. translation control, we've done that through a one SPS burn and for the initial separation maneuver for the S-IVB. Walt, just before he retired down last night had the manual to rate mode and said it was satisfactory. We have not been rate command high rate, we're little low during maneuvers to correct the attitude following separation. We also used the back S-band to 8 degree during the SPS cold soak. And used that here, your minimum DEADBAND high rate during SPS cold soak.

CAPCOM Roger, looks good then.

SC I don't know what all they need to have of data down there, but as far as we're concerned we're running out pretty thoroughly, and we're pleased with the very smallest as far as handling problems. All I could tell you some more on those too. We're a little curious as to the fuel consumption on some of them. I think some of them, particularly with the kind of DEADBAND we're using a little more than we thought we might based on our simulations before we flew.

CAPCOM Roger.

PAO This is Mission Control. We're about on the fringe of coverage from the Mercury. However, we do have overlapping coverage from Guam on this pass, and we'll continue to monitor.

CAPCOM Apollo 7, Houston.

SC Roger, GO.

CAPCOM Roger, recommend H2 heaters to auto, both tanks.

SC H2 heaters to auto, both tanks, okay.  
(garbled), over.

CAPCOM Roger.

SC Rog. Yeh, Ron, can you give us the H2 tank quantities that you have down there.

CAPCOM Roger, H2 tank 1 36.58, tank 2 36.38.

SC Roger, 36.58, 36.38.

CAPCOM Roger.

CAPCOM Apollo 7, Houston, 1 minute or 30 seconds to LOS. Redstone at 40.

SC Roger, be waiting.

CAPCOM Roger, be curious to know do you notice much of the deviation from perigee to apogee in this orbit?

APOLLO 7 COMMENTARY, 10/18/68, GET: 1771000 (CDT 7:15p) 542/3

SC I haven't picked it up yet. I haven't  
been looking out the window that much, but should expect to  
see some.

CAPCOM

Roger.

PAO This is Apollo Control at 177 hours  
22 minutes, and we've had loss of signal with the spacecraft  
from Guam.

END OF TAPE

PAO This is Mission Control, Houston at 177 hours 40 minutes into the flight of Apollo 7. The mission is progressing very well, almost without incident at this time. Wally Schirra, and Walter Cunningham began their scheduled 8 hours sleep periods about two hours ago. In the meantime we have been maintaining contact with the spacecraft through our tracking sites with Command Module Pilot, Donn Eisele. Donn ended his 8 hours sleep period about the same time his two fellow crewmen began their's. Apollo 7 is currently in orbit with a high point of about 243 nautical miles, and a low point of about 90 nautical miles. Following that very succesful burn earlier today with the 21 000 pound thrust spacecraft Service Propulsion System engine. The SPS engine is scheduled to be ignited three more times including a burn to bring the spacecraft back to earth Tuesday. At present time Apollo 7 spacecraft is approaching acquisition over the Redstone in the South Pacific. We'll stand by for CAPCOM Ron Evans to put in a call to Eisele.

CAPCOM Apollo 7, Houston through Redstone, standing by.

CAPCOM Apollo 7, Houston through Redstone, standing by.

SC Roger, Ron do you read?

CAPCOM Roger, read you now.

SC Okay.

CAPCOM Apollo 7 Houston. I have some flight plan updates, whenever you're ready to copy them.

SC Okay, Ron stand by a minute.

CAPCOM Apollo 7 Houston, Stand by on those flight plans we'll catch them later.

SC Alright.

CAPCOM Apollo 7, Houston, 1 minute LOS Ascension at 07 and it looks like your exercising or something.

SC Yea, how'd you guess?

CAPCOM The good surgeon just came through.

PAO This is Apollo Control at 177 hours 51 minutes and we've just had loss of signal from the spacecraft over the Redstone. As you heard that time, Donn Eisele confirmed CAPCOM Ron Evans' suspicion that he was doing his exercises at this time. That was indicated by the biomedical scope here in the Control Center, now showing Donn's heart rate going up somewhat. Eisele joked the other night that the only time he had a chance to use the inflight exerciser was when his two fellow crewmen were asleep. We'll be picking up the spacecraft again over Ascension. Acquisition there is scheduled at 178 hours 7 minutes, or about 17 minutes from now. This is Apollo Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 17808 (CDT 815p), 544/1

PAO This is Apollo control at 178 hours 08 minutes, we have acquired the spacecraft now over Ascension. Now let's listen in.

CAPCOM Apollo 7, through Ascension standing by.  
SC Roger, Houston, Apollo 7, how do you

read?

CAPCOM Roger, loud and clear.

SC Right.

CAPCOM Apollo 7, Houston, opposite OMNI.

SC garble.

CAPCOM Roger.

CAPCOM 7, Houston.

SC Roger, GO.

CAPCOM Roger, one and only is currently observing your progress across the plot board.

SC Oh, she is, eh?

CAPCOM Roger.

SC What time is it back there anyway, about eight o'clock?

CAPCOM Affirmative, eight fifteen.

SC Oh, yea. - Tell her I might drop in in a week or so.

CAPCOM Roger. - Apollo 7, Houston, 30 seconds LOS Mercury at 45.

SC Roger, I understand.

CAPCOM Roger.

PAO This is mission control, Houston, the spacecraft has now gone out of range of the tracking station at Ascension. Eisele was advised during that pass that his wife, Harriet, was here in mission control center observing the progress of the flight. We'll be acquiring the spacecraft again in about 26 minutes as it passes over the tracking ship Mercury.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 1784600 (CDT 8:50P) 545/1

PAO This is Mission Control Center, Houston at 178 hours 46 minutes and we have just acquired the Apollo 7 spacecraft over the tracking ship Mercury, and we'll be putting in a call shortly to the spacecraft.

CAPCOM Apollo 7 Houston through Mercury.

SC Roger, Houston, Apollo 7.

CAPCOM Roger, loud and clear.

CAPCOM Donn, we'd like to power up the CMC over Mercury and Guam and then power down again over Redstone.

SC Okay, you want to do that now?

CAPCOM Affirmative.

SC All right, go ahead.

SC Say, Ron, would you speak to the visitor you mentioned last pass? Did you take care of that little detail for me?

CAPCOM Affirmative.

SC All right, thank you.

CAPCOM Apollo 7, Houston.

SC Go ahead, Apollo 7, Guam.

CAPCOM Roger, your state vectors have been integrated forward and you can power down at your convenience.

SC Okay, Roger.

CAPCOM Apollo 7 Houston, opposite OMNI.

SC We have it.

CAPCOM Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 17855 (CDT 0900p), 546/1

CAPCOM Apollo 7, Houston, 30 seconds LOS,  
Redstone at 16.

SC

Roger.

PAO

This is mission control, the spacecraft is now going out of range of the station at Guam, during that pass over the tracking ship Mercury and on out over Guam, we had Eisele pawller up the command module computer briefly to bring the computer up to date with the latest orbital information. The computer has now been pawlled back down. We'll be coming up on the Redstone in about 18 minutes from now at 178 hours 58 minutes into the flight, this is Apollo control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 1791600 (CDT 9:20P) 547/2

CAPCOM For Bat A you have 29.3, Bat B 26.9 and  
Bat Charlie 39.5.

SC Roger. Would you read those again, I  
was out on the couch pulling the circuit breakers.

CAPCOM Roger, sorry.

CAPCOM Bat A 29.3, Bat B 26.9, Bat Charlie 39.5.

SC Roger. A and B are a little low, aren't  
they?

CAPCOM They're coming down on schedule, yes.

SC Roger.

CAPCOM Apollo 7 Houston, 1 minute LOS Ascension

44.

SC Roger.

PAO We'll regain contact with the spacecraft  
in about 18 minutes so over Ascension, that will be a rela-  
tively low elevation pass with the spacecraft passing well  
to the north of the tracking station. At 179 hours 27 minutes,  
this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET 1794400 CDT 9:50p 548/1

PAO This is Apollo Control at 179 hours 44 minutes the spacecraft at this time is coming up on the tracking station at Ascension completing a night side pass. We just received indication that we have acquired from Ascension. We'll stand by for that call.

CAPCOM Apollo 7, Houston through Ascension standing by. Apollo 7, Houston, look's like we got some more Gold Medals today.

SC What were they?

CAPCOM Roger, 400 meter Lee Evans and long jumper Bob Beaman plus Sue Remick in women's springboard each picked up a Gold Medal. Evans by the way (cut off)

SC Very good

CAPCOM Evans, by the way, of San Jose, California, he lead a 1 2 3 sweep in his 400 meter run.

SC Who did that?

CAPCOM Lee Evans. He got first, two other gents from the United States got second and third.

SC All in the 400 meters?

CAPCOM Affirmative.

SC Well that's pretty good. Any relation to you?

CAPCOM No, but I would like it to be though.

SC -Say Ron, I was looking at this flight plan at this TV business. It doesn't look to me like to good a time to do it because that's right in the middle of my sleep period. I was wondering if it would be all right to do it earlier, they don't have much going on today except this secondary coolant test.

CAPCOM Ah I see. What you're saying is you like to be on TV.

SC No, I don't care to be on TV but I don't care to have those guys walking around while I'm trying to sleep either.

CAPCOM No, We'll check into it and let you know later.

SC I think what it is, they're trying to set this up so it ties in with somebody's TV show. Seem to me you could move it back or move it ahead an hour or two and then tape it, or do you want to do that?

CAPCOM I don't know about that, I will check into it.

SC That's kind of an awkward time for us because that's when we're usually changing shifts and so forth.

APOLLO 7 COMMENTARY, 10/18/68 GET 1794400 CDT 9:50p

548/2

CAPCOM Roger, We'll take a look at it I think  
it may have something to do with that secondary loop test.

SC I believe you're right. The secondary  
loop test will still go along alright while that's going  
on. Start to check into it anyway and see what they say.

CAPCOM Will do.

SC Thank you

PAO This is Mission Control we've lost  
acquisition now from ascension but because of the fact that  
the spacecraft is in a higher orbit and at the present time  
is near apogee of 240 nautical miles we have overlapping coverage  
from the Canary Islands. We'll continue to stand by.

CAPCOM Apollo 7, Houston 30 seconds LOS Guan  
at 28.

SC Roger, Guam at 28.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 1802900 (CDT 10:30p) 549/1

PAO This is Apollo Control at 180 hours 29 minutes. The spacecraft is presently coming within range of the station at Guam. This will be low elevation pass and relatively brief. At the present time, Wally Schirra and Walt Cunningham are about 5 hours into their scheduled 8 hours sleep period. And the spacecraft is midway through day side pass. We've just put in a call to Donn Eisele onboard the spacecraft. We'll stand by for any conversation.

CAPCOM Apollo 7, Houston.

SC Roger.

CAPCOM Roger, Donn. Looks like we're going to move the TV one orbit before. I can change your times if your ready to copy.

SC Go ahead.

CAPCOM 7, Houston, did you say go ahead. 7, 30 seconds till LOS. I'll catch you at Redstone at 52.

SC Okay, fine. I'll talk to you then.

PAO This is Mission Control. We have lost the signal of the spacecraft now from Guam. And we'll be reacquiring over the tracking ship Redstone in about 20 minutes from now. As you heard Cap Com Ron Evans attempted to pass up to Donn Eisele onboard the spacecraft an updated time on the television pass for tomorrow. He said we would be doing it one revolution earlier. According to our first calculations that would put it at about 7:15 tomorrow morning. We will update that time and refine a little more as necessary. At 180 hours 32 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 18052 (CDT 1055p) 550/1

PAO This is Apollo control at 180 hours 52 minutes into the mission, we'll have acquisition of the spacecraft over the tracking ship Redstone shortly, we'll stand by for Capcom Ron Evans to put in a call to the crew.

CAPCOM Apollo 7, Houston, Redstone.

SC Go ahead, Houston, Apollo 7.

CAPCOM Roger, I have block data, number 20 and some flight plan up dates.

SC Okay, before that, I've got a little problem here with my biomed. One of the signal conditioners here is getting quite hot, so I took the whole thing off and stowed it. I just thought I better pass that along and see if the flight surgeon has got any ideas on what he wants me to do.

CAPCOM Roger, which one got hot, your black one or the blue one.

SC I don't know much about them, the one on the right - that curves to the right.

CAPCOM Roger - Rog, Don the one furthest to the right is the power supply.

SC Rog, I don't care which one it is, I'm not going to wear it any more.

CAPCOM Roger.

SC Sounds like I triggered the (garble). That was standing on the sweet talk about how there weren't any.

CAPCOM I understand.

SC Rog, okay, I'll get it just before that one to go with the other one. Why don't you give me that flight plan (garble).

CAPCOM Okay, everything's the same, if you'll check your emergency key test.

SC Say again.

CAPCOM On the emergency key test.

SC Yea.

CAPCOM We'll do it at 190 plus 35.

SC Okay

CAPCOM Prepare TV, at 188 plus 00. TV turn on at 189 plus 02. TV pass 189 plus 04 to 189 plus 15.

SC Okay, I got TV over to 18902. TV pass from 04 to 15 and you moved the USB key emergency key test over to 19035.

CAPCOM Roger.

SC Okay.

CAPCOM Now, I have block data when your ready to copy.

SC Go ahead with the block data Ron.

CAPCOM Roger, 17 dash 1 charlie plus 224

APOLLO 7 COMMENTARY, 10/18/68, GET: 1805200 (CDT 10:55P) 550/2

CAPCOM MINUS zero 552 183 plus 54 plus 593833  
118 dash 1 alpha plus 277 minus zero 6 zero 2 185 plus 31  
plus 453310 119 dash 1 bravo plus 3 zero 3 minus zero 6  
zero zero 187 plus 12 plus 182973 12 zero dash 1 alpha plus  
282 minus zero 6 zero 2 188 plus 54 plus zero 82841 121 dash  
1 alpha plus 225 minus zero 63 zero 19 zero plus 35 plus 193477  
122 minus 4 alpha plus 298 minus 162 zero 193 plus zero 9  
plus zero 9 3 zero 88. Houston, over.

CAPCOM Apollo 7 Houston, opposite OMNI.

SC Roger. That's 117 plus 1 charlie plus  
224 minus zero 552 183 54 593833 118 dash 1 alpha plus 277  
minus 0602 185 31 453310 119 dash 1 bravo plus 303 min 0600  
187 12 182973 120 dash 1 alpha plus 282 minus 0602 188 54  
082841 121 dash 1 alpha plus 225 minus 0630 190 35 193477  
122 dash 4 alpha plus 298 minus 1620 193 09 093088.

CAPCOM Apollo 7 Houston, read back correct.

SC Ron, I've got one other flight question  
for you.

CAPCOM Roger, go.

SC Roger. In our checklist there's a pro-  
cedure called the GEC and/or IMU backup alinement and it's  
identically the same procedure for either or both preferences.  
I noticed in the flight plan, we've got two separate tests  
there, which apparently are the same thing. I wonder if you  
could clarify that? There's one on 262 and one on 273.

CAPCOM Roger. We'll investigate and advise.

SC Okay.

CAPCOM And on your B23, we have good data. We  
will be assessing it tomorrow and let you know.

SC You say you did get good data.

CAPCOM Affirmative.

SC Well, fine.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 1806200 (CDT 11:05) 551/1

CAPCOM Apollo 7 Houston, one minute LOS, Canaries  
at 23

SC Roger, understand at 23  
PAO This is Mission Control the spacecraft  
is now going out of range of the tracking ship Redstone.  
We'll be reacquiring at the Canary site in about 20 minutes.  
During that pass we passed an update to Eisele on a televi-  
sion pass for tomorrow of the new time for acquisition at  
the Corpus Christi site and the beginning of the television  
transmission from the spacecraft is now 189 hours, 4 minutes  
ground elapsed time and we compute that to be about 7:07 AM,  
Houston time tomorrow. Eisele also advised that the signal  
conditioner power supply in his biomedical harness was  
apparently heating up, he said he had taken it off and  
stowed it. At 181 hours, 4 minutes into the flight this is  
Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/18/68, GET: 18123 (CDT 11:30 p) 552/1

PAO This is Apollo Control 181 hours 23 minutes into the mission of Apollo 7. We're anticipating acquisition at Canary Islands in a very few seconds; let's listen in.

CAP COM Apollo 7, Houston through Canary standing by.

SC Ah, roger.

CAP COM Roger, loud and clear.

SC ...

CAP COM Apollo 7, Houston. Opposite omni.

SC Roger.

CAP COM Apollo 7, Houston 30 seconds to LOS, Honeysuckle at 11, that'll be at USB only.

SC Okay, 11 for Honeysuckle and I'll tune it up.

CAP COM Apollo 7, Houston. My mistake, Honeysuckle is not up this pass, it will be Redstone at 27.

SC Okay, Redstone 27, look for you then.

CAP COM Roger. We're going to be in a quander in the morning. You're supposed to pass right over Houston at the same time you're shootin' down the TV pictures so we'll probably be looking at the TV instead of the spacecraft.

SC If you got a portable you could watch it outside.

CAP COM Roger.

PAO This is Apollo Control 181 hours 32 minutes into the mission of Apollo 7. Our next acquisition point will be Redstone tracking ship at 182 hours 27 minutes. This is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 18244 (CDT 1:47a) 553/1

PAO This is Apollo Control 182 hours 44 minutes into the mission of Apollo 7. We're on our 116th revolution, we have a tape from, correction we're ending our 115th revolution, we have a tape from the last pass at the Redstone tracking ship which we'll roll now. Shortly after that we'll be at Antigua acquisition and we'll go live for that. So, let's hear the tape.

CAP COM Apollo 7, Houston through Redstone.  
SC Hello, dere.  
CAP COM Hi, how are you this evening?  
SC Just fine, Bill, how are you?  
CAP COM Bright eyed and bushy tailed.  
SC Atta, boy.  
CAP COM Apollo 7, Houston. I have a two zero  
time for your secondary coolant loop test.  
SC Say again, Bill, please.  
CAP COM I have the update time for the secondary  
coolant loop test.  
SC Oh, okay, start time for the test you  
mean?

CAP COM Rog.  
SC Okay, go ahead.  
CAP COM It's 183 + 40.  
SC Roger, 183 + 40.  
CAP COM Right, and I also have been reminded to  
pass on, said you probably already knew, but that BD cycle  
entries on the procedure are not appropriate, they're not  
applicable.

SC Understand, the BD cycle entries are not  
appropriate.

CAP COM Affirmative.  
SC ... some of you down there hawkeyes the  
radiator parameters on the ... keeping an eye on how they're  
doing.

CAP COM Right.  
SC Houston, Apollo 7.  
CAP COM Go.  
SC Roger, we decided to start calling this  
thing the emergency coolant loop rather than secondary so  
from now on we'll use that term.

CAP COM Rog.  
SC That's really what it is.  
CAP COM Okay. Apollo 7, Houston.  
SC Roger, Houston.  
CAP COM Say, Donn, I have a question about this  
glitsch on the number one ball. Ah, we had a reading here  
that even with the ordeal power switch off, the switch must  
be in inertial on the ordeal panel to preset ordeal selection

APOLLO 7 COMMENTARY, 10/19/68, GET: 18244 (CDT 1:47a) 553/2

CAP COM when you switch back to ball one. Do you happen to know whether or not the switch was to inertial on the ordeal box when you had the trouble?

SC Bill, why don't you wait until Wally gets up after while and you can discuss that. I wasn't awake when all that was going on so I don't know what elapsed.

CAP COM Okay, disregard.  
SC He's awake, I could relay it to him. I think it would be easier if you just talked to him later on.

CAP COM Okay, that'll be fine. Apollo 7, Houston one minute LOS Redstone, Antigua at 47.

SC Roger.  
PAO This is Apollo Control 183 hours 47 minutes into the mission, we should have acquisition at Antigua very shortly, we'll stand by.

CAP COM Apollo 7, Houston through Antigua.  
SC Roger, Houston.

CAP COM ... and Donn, I copied a number just about LOS and you were just starting to go unreadable. I copied 06853 and what was the significance of that number?

SC Oh, that was a radiation reading. Walt tells me we haven't been calling that down so you can disregard it.

CAP COM Okay. (pause) Apollo 7, Houston one minute LOS Antigua, Canary at 59, about 3 minutes.

SC Roger.  
PAO This is Apollo Control 182 hours 56 minutes into the mission. We've lost acquisition at Antigua we're now anticipating contact at Canary Islands at 59, 182:59. This is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 18259 (CDT 1:02A) 554/1

PAO This is Apollo Control 182 hours 59 minutes into the mission of Apollo 7. We are at the point of acquisition of Canary Islands. Let's listen in.

CAPCOM Apollo 7. Houston through Canary.

SC Roger, Clear Lake Cap Com. This is Apollo 7.

CAPCOM Roger.

CAPCOM Apollo 7. Houston. We will need S-band volume up for about a minute and a half longer contact over Madrid.

SC Roger. That is the first contact over Madrid, isn't it Bill?

CAPCOM I think we got one last night. In fact, we had a little trouble getting the handover executed.

SC Roger, Bill. And good morning.

CAPCOM Good morning, Sir. I was told I had better be real careful talking to you today.

SC Say again, Bill.

CAPCOM Sorry Walt, I thought that was Wally.

PAO This is Apollo Control 183 hours 07 minutes into the mission of Apollo 7. We have just lost acquisition at Canary Islands. They are checking communications apparently with the Madrid station - through the Madrid station. After that we will have a dry spell until we have contact at Carnarvon at 1 - maybe 3:36. At 183 08, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 18335 (CDT 1:40a) 555/1

PAO This is Apollo Control 183 hours 36 minutes into the mission of Apollo 7. We're approaching Carnarvon now in Australia, we should have acquisition any second; let's stand by.

CAP COM Apollo 7, Houston through Carnarvon.

SC Roger, Bill.

CAP COM Rog.

SC Hey Bill, we had the primary evaporator front AUTO ... in hopes that it would ... sometime during the night it would be serviced. I can't verify it because I wasn't awake but I don't believe it's operated all night long. We've got low power and it's got almost 48 hours. I'd like to find out about water ... so that we are going ahead manually ... (garbled) secondary ... loop.

CAP COM Stand by. (pause) Apollo 7, Houston. EECOM advises that the evaporator was reserviced less than 48 hours ago, but it's okay to recycle the back pressure valve by the normal procedure passed up earlier but they recommend that you don't add water to it.

SC We're not going to add water and we're not going to recycle it, we're going to go ahead with secondary coolant loop operation now.

CAP COM Ah, Walt, we're having a little keyhole trouble here, would you say again please?

SC We're not going to add water to it and I'm not going to reservice it at this time. I'm going ahead with the secondary coolant loop operation.

CAP COM Rog, understand. (pause) Apollo 7, Houston, opposite omni and one minute Carnarvon LOS, Honeysuckle at 43 and I have - require S-band volume up.

SC Roger, 43 and I have S-band volume up.

CAP COM Rog. (pause) Apollo 7, Houston you can cease fuel cell purge on fuel cell three now.

SC Roger, that completes all three of them.

CAP COM Rog.

PAO This is Apollo Control 183 hours 42 minutes into the mission of Apollo 7. We've lost acquisition at Carnarvon, there is only a little less than a minute and one-half to wait for the pass at Honeysuckle Creek, we'll stand by.

CAP COM Apollo 7, Houston through Honeysuckle. (pause) Apollo 7, Houston we're monitoring your secondary loop performance. It looks okay so far, we have about four and one-half minutes left, but there is a keyhole uncertainty.

SC Roger, say again, Bill, you just came in.

CAP COM Rog, we're monitoring the secondary loop and it looks good.

APOLLO 7 COMMENTARY, 10/19/68, GET: 18335 (CDT 1:40a) 555/2

SC Roger, understand. ..., Bill. (pause)  
Hey, Bill, can you pick up a nav update for us and if you  
can't get it to us over this station, will you give it to  
us over the next one?

CAP COM Rog, I've got one waiting for you here  
if you're ready to copy. Apollo 7, Houston I have a map  
update when you're ready to copy.

SC Go ahead.

CAP COM For rev 116, 182 + 47 + 12, 74.2 West,  
for rev 117, time is 185 + 48 + 03, 120.5 West.

SC Roger.

CAP COM Apollo 7, Houston one minute LOS Honey-  
suckle, Redstone at 04.

SC Roger, Bill.

PAO This is Apollo Control 183 hours 51 min-  
utes into the mission of Apollo 7. We have lost acquisition  
at Honeysuckle Creek in Australia. We're anticipating the  
Redstone tracking ship acquisition at 184 hours 4 minutes.  
At 183:52, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 18404 (CDT 2:07a) 556/1

PAO This is Apollo Control 184 hours 04 minutes into the mission of Apollo 7. We're approaching the time of acquisition at the Redstone tracking ship; we'll stand by.

CAP COM Apollo 7, Houston through Redstone.

SC Roger, loud and clear, Bill.

CAP COM Thank you.

SC Bill, verify for me on this secondary coolant loop test I have not bypassed the primary radiators. The pumps are off but the radiators are not bypassed on the primary loop.

CAP COM Stand by. Rog, that's correct.

SC Thank you. Secondary loop seems to be doing fine.

CAP COM Right, we're watching it here and it looks good. (pause) Wally, I have a question on this glitch you got in the number one ball when switching -

SC ... glitch, Bill, it happened three times and stayed that way on the third time. I cannot transfer GEC's to number one ball.

CAP COM Rog, ah, one question that the ground would like to ask and that is, ah, what was the position of the inertial switch? Was the switch in inertial on the audio panel?

SC That's affirmative.

CAP COM Rog, thank you very much.

SC Bill, you still read?

CAP COM Rog.

SC It transferred and then flipped 180 degrees in pitch.

CAP COM 180 degrees in pitch.

SC Roger, at first I had it exactly right then it flipped right over. From then on it kept flipping over.

CAP COM Okay, I think that's significant.

SC Roger.

CAP COM The fact that it was okay to start with.

SC ... but not very long.

CAP COM Okay. Right, Wally, the statement I got here was that even with the ordeal power switch off, you had to have inertial selected to prevent this glitch from occurring when you select ordeal.

SC I'm well aware of that, roger.

CAP COM Right, okay. Ah, Walt, let me know when you have a minute, I'd like to cover about three points on the biomed harness.

SC Okay, may not be very elaborate points, I've got two sensors now with the good leads apparently hooked

SC into the blue transducer. Over.  
CAP COM Okay, that's the yellow one hooked into the blue transducer, is that correct?  
SC Affirmative.  
CAP COM Okay. I'll pass on the recommendation. First point is, they would like to have tape wrapped around the leads starting with the yellow connector and wrapping the tape around the leads to about two inches down from the yellow connector to avoid a fatigue area there where the wires go into the little yellow housing, or plastic covering.  
SC Ah, Bill.  
CAP COM Rog.  
SC Go.  
CAP COM Go.  
SC Ah, I think we better refer back to the address board where I stand, I'll have no chiggers in the suit loop and we've gone much too far with this kluge right now. Now when Donn Eisele has a hot signal condition there, we've reached the bitter end. If we get suited up for re-entry, we're gonna take 'em off.  
CAP COM Rog, understand copied.  
SC Roger. I'm not yielding on that one. Bill, last night I replaced the upper sternal sensor with a new one that was low enough to reach the lead.  
CAP COM Good, that was the final point. They just wanted to make sure if it was possible to get the two sternal sensors located so that they didn't put tension on the leads.  
SC Right, I didn't think they wanted them right next to each other. I got it as low as I could and they barely reach now. Looks like it will probably work.  
CAP COM Sounds good. Thank you very much.  
SC Bill, we've done all we can, I think, to make them work and I'd rather not prevent a breakage because that's the thing that scares us. Donn had one and I had one and one more we just may have trouble.  
CAP COM Rog, I think there's been a good effort in that respect. I don't think there's any question from the ground.  
SC Okay, thank you.  
CAP COM Apollo 7, Houston one minute LOS Redstone, Mila at 22, secondary loop looks real good.  
SC Roger.  
PAO This is Apollo Control 184 hours 14 minutes into the mission of Apollo 7. We've lost contact with the Redstone tracking ship. We had some conversation on the ECS environmental control system, coolant loop test, which it was indicated from Cap Com Pogue continues good. Then

APOLLO 7 COMMENTARY, 10/19/68, GET: 18404 (CDT 2:07a) 556/3

PAO                   there was some biomedical harness conversation and Pogue was passing up instructions to them to wrap tape around the leads for two inches from the connect point and Astronaut Schirra indicated that they've gone far enough with those kluges, that Eisele had a hot signal condition and they've reached the bitter end at that point. He also said they'd done all they could do to make it work and since Eisele had a breakage and Schirra had a breakage, that was it. At 184:15, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 184 hours, 22 minutes into the mission of Apollo 7. We're approaching acquisition point at Merritt Island, Florida in a few seconds and that will carry us through Merritt Island, Antigua, and Bermuda stations. Then we'll have a couple of minutes about 3 minutes between LOS signal at Bermuda and the acquisition at Canary Islands. So this will be a relatively long pass. Let's listen in.

CAPCOM Apollo 7, Houston through Mila.

SC We've got a problem for the day.

CAPCOM You were garbled, say again, please.

SC We've got a problem for the day.

CAPCOM What's that?

SC We are really worried about the crew.

They are all glocked up with these colds. We're having a time to get one to clear. And we are seriously considering reentering shirt sleeve. But I'm afraid that we can't quite clear our ears on the way down, but if we do have to clear them on the way down, we'll have to take the helmets off. And then they become a hazard bouncing the cockpit. We feel the risk of rupturing our eardrums is higher than the risk of injury without having our suits on. We realize the restraint harness will fit as closely because considering we can wear our life vest over our shirt sleeves.

CAPCOM Roger. I think we understand what you are saying there. And there has been considerable ground discussion regarding that.

SC At this time we feel the risk is low to come in shirt sleeves and I don't have my lists.

CAPCOM Roger, understand, copy.

SC Houston, Apollo 7, over.

CAPCOM Apollo 7, Houston, GO.

SC 8620 - I'm powering those items listed on the spacecraft 50 point configuration of the checklist, all except the - plan or all except the CMC and the G & N. And will that bring us up to the proper power level for the next phase?

CAPCOM Okay, standby. Apollo 7, Houston write at 186 plus 40, you power up the SCS and ground will command up some S-Band equipment. But all that it is necessary onboard is for you to power up the SCS.

SC Okay, on that same list we have one cabin fan. We've been generally running without the cabin fans. Should I - do I have to have that cabin fan on or not?

CAPCOM No, you can leave it off.

SC I can leave the cabin fan off.

CAPCOM Right. Apollo 7, Houston. That secondary coolant loop is looking very good.

SC Try to concur.  
CAPCOM Apollo 7, Houston, coming upon LOS  
Canary at 35.  
PAO This is Apollo Control at 184 hours,  
33 minutes into the mission. We will acquire Canary Islands  
at 184 hours, 35 minutes into the mission.  
SC Houston, Apollo 7.  
CAPCOM GO.  
SC Roger, Bill, we carried your report on  
our MDC mission timer a small crack in a few days ago.  
CACCOM Roger.  
SC We have a second crack that developed  
into burn five and it is extending a little bit. It cuts  
from across left to right above the number one in one hund-  
red's hours. And it cuts into tens of hours. We're report-  
ing these to show that they are logged prior to landing.  
CAPCOM Roger.  
SC So there are two cracks now in that  
piece of glass.  
CAPCOM Understand, two cracks.  
SC Roger. And the second one was politively  
developed in flight - I really can't say about the first one.  
CAPCOM But this one you noticed right after  
burn five?  
SC That's correct.  
CAPCOM Thank you. Apollo 7, Houston. We'll  
need a USB volume up at 42 for contact through Madrid.  
SC Roger. 10047?  
CAPCOM GO.  
SC Roger. This is a fine thing we don't  
have any film. We're getting some fantastic passes today.  
CAPCOM Good.  
SC We got cut back too far on (garble)  
CAPCOM Apollo 7 sorta faded out there. We'll  
call you on S-Band here in about 30 seconds. Apollo 7,  
Houston. On S-Band through Madrid, how do you read?  
SC Roger, loud and clear with a slight  
echo.  
CAPCOM One minute until LOS, Carnarvon at  
10.  
SC Roger, Carnarvon 10. Hey, Bill, log  
LMP 15 clicks of water, will you please?  
CAPCOM Roger, 15, thank you.  
PAO This is Apollo Control, 184 hours,  
44 minutes into the mission of Apollo 7. During that pass,  
spacecraft commander Schirra indicated the problem for the  
day was as far as he was concerned was that he was very  
worried about the colds the crew has and the possibility  
of rupturing eardrums. And they were seriously considering

PAO reentering when the time comes in shirt sleeve mode. He also indicated that even if they did reenter in shirt sleeves, they could still wear their life vests. It was passed up to him that what to be done in that situation was still being considered here on the ground. CAPCOM Pogue indicated that - the ground will power up some equipment at 186 hours, 40 minutes. All the crew has to do on Apollo 7 is power up the SCS (Stabilization and Control System). Schirra indicated there is another small crack in the mission timer glass and he noticed that after the SPS burn this morning, the number five burn. So that makes a total of two cracks in that glass which is incidental but he reported it as a matter of interest. At 184 hours, 45 minutes into the mission of Apollo 7, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 18510 (CDT 3:12a) 558/1

PAO This is Apollo Control 185 hours 10 minutes into the mission of Apollo 7. We're coming up on Carnarvon, let's stand by.

CAP COM Apollo 7, Houston through Carnarvon standing by.

SC Roger. (pause) We have Carnarvon in sight in Sharps Bay, we'll see if we can get that ... in there over the pass.

CAP COM Right.

SC Carnarvon loud and clear.

CAP COM Right.

SC As always. Tell them down there, Bill, we're right over them 240 miles.

CAP COM Right.

SC I think they know where we are better than we do.

SC That's about true.

CRO Well, I'm right here.

SC Lewis, we're looking down at you.

CAP COM Apollo 7, Houston, opposite omni and S-band volume up at 19.

SC Hey, Bill, we apologize for having you work over the weekend.

CAP COM You're too kind. (pause) Apollo 7, Houston, we have about 3-1/2 minutes until LOS but we do have a keyhole problem. Texas at 53.

SC Texas 53, roger. Roger, ... to Cap Com.

CAP COM I've moved.

PAO This is Apollo Control at 185 hours 28 minutes into the mission. We are losing acquisition at Honeysuckle Creek in Australia. Our next point of contact will be Texas at 185 hours 53 minutes. At 185:28, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 18553 (CDT 3:58a) 559/1

PAO This is Apollo Control 185 hours 53 minutes into the mission of Apollo 7. We now have Texas acquisition; let's stand by.

SC Houston Cap Com, Apollo 7, over.

CAP COM Roger, go.

SC Roger, on the secondary coolant loop test, I'm logging fuel cell curves ... I'm logging when we started the test. Are there any other times of the loop to be logged?

CAP COM Would you say again the last part there, Walt, I didn't quite understand.

SC The secondary coolant loop, ECO, I logged the fuel cell curves when we started the test, what are the other two blanks for what times. One's in the upper high power on I would imagine and I don't know where the third one goes.

CAP COM Stand by.

SC ... Cap Com, do you have any word on the GET time on ... one.

CAP COM Negative. Ah, Walt, we're checking on those times.

SC Roger, look for it Cap Com.

CAP COM I feel like I'm gonna be had.

SC No, that's Friendswood.

CAP COM Apollo 7, Houston. Reference to the logging of fuel cell currents, opposite selected times, you can disregard. That was only in case we couldn't get readouts and we are getting good readouts.

SC Roger, thank you.

CAP COM Rog, we're getting it on the D&C and it's running. Also, in relation to the FDAI one, apparently the troops thought they had it figured out here but it had to do with the switch not being in inertial and when you said it was, it sort of threw them back to the drawing board and they're still looking at it.

SC See, I went through that caper long ago in the simulator. Thank you, Dickinson.

CAP COM Apollo 7, Houston. You're GO for 135 dash one.

SC Roger, thank you Dickinson Center.

CAP COM Apollo 7, Houston one minute LOS, we'll have Canary at 11 and we will have an S-band backup voice check.

PAO This is Apollo Control 186 hours 08 minutes into the mission of Apollo 7. We anticipate Canary Islands at 186 hours 11 minutes. During this last pass we also passed up a GO to the spacecraft for 135 dash one which means 134 orbits. At 186:08, we'll stand by now for the Canary Island pass.

END OF TAPE

CAPCOM Apollo 7, Houston, through Canary.  
SC Roger, League City CAPCOM, Go.  
CAPCOM Apollo 7, Houston. For a check on our  
backup S-Band, request up telemetry switch to up voice back-  
up and S-Band volume increase.  
SC Houston, Apollo 7, let me know voice  
backup.  
CAPCOM Okay. Canary COMTEC, this is Houston.  
Disable VHF uplink, please.  
SC Houston, Apollo 7.  
CAPCOM Apollo 7, Houston, GO.  
SC I want up voice backup if you call me.  
CAPCOM Right. Apollo 7, Houston, do you read?  
SC Houston, Apollo 7, I'm reading you fine.  
CAPCOM Roger. We'll stay on this for a few  
minutes and see how it checks out.  
SC Then I'm up voice backup?  
CAPCOM Affirmative.  
SC Very, very clear.  
CAPCOM Good.  
SC Bill, are we - are we going over the  
Canary Islands now?  
CAPCOM Affirmative.  
SC Roger, have them in sight.  
CAPCOM Apollo 7, Houston, 3 minutes until LOS.  
SC It seems to be cutting in and out.  
CAPCOM Okay, I'll give you a short count,  
1 2 3 4 5 5 4 3 2 1, short count out.  
SC Roger, read you 5 by 5.  
CAPCOM Good. Apollo 7, Houston, you can put  
up telemetry...back to data.  
SC All right.  
CAPCOM (garble) Apollo 7, Houston, back on VHF.  
Apollo 7, Houston, back on VHF.  
SC Loud and clear.  
CAPCOM Roger, about 1 minute and 1/2 Canary  
LOS, Canarvon at 45.  
SC Thank you.  
CAPCOM And Apollo 7, we'd like to confirm - up  
to telemetry data switched to data.  
SC Telemetry data switched to data.  
CAPCOM Roger.  
PAO This is Apollo Control, 186 hours,  
18 minutes into the mission of Apollo 7. We've just lost  
acquisition at the Canary Islands Tracking Station. And  
we're anticipating the next contact to be Canarvon, Austral-  
ia at 18645. It's currently 18618 into the mission. During  
the Texas pass, we had a GO for revolution 134. At 18619,  
this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 18645 (CDT 4:46a) 561/1

PAO Australia (noises)  
SC Houston, Apollo 7.  
CAP COM Go.  
SC Would you run through the SPS pilot  
check list and tell me if our loading right now is adequate  
for this part of the test.  
CAP COM Stand by. Apollo 7, Houston, we'll be  
right back with you, we're checking it out.  
SC Thank you.  
CAP COM Apollo 7, Houston, opposite omni, also  
your load now is from 350 to 400 watts which is the required  
Delta. We have powered up the S-band power amplifier and  
the FM transmitter.  
SC Roger. (pause) Houston, Apollo 7.  
CAP COM Apollo 7, Houston, go.  
SC Roger, magazine R, frame 33, Sharks Bay  
and Carnarvon station; frame 34 is a town just South of there.  
CAP COM What was the subject for frame 33?  
SC Frame 33 is Sharks Bay and Carnarvon  
and 34 is a town about 60 miles South of there.  
CAP COM Thank you. (pause) Apollo 7, do you  
have a GDC on FDAI one?  
SC Negative.  
CAP COM Thank you.  
SC That's the IMU wheeling around.  
CAP COM Rog. (pause) Apollo 7, Houston, coming  
up on LOS Carnarvon. You can turn the S-band volume up in  
one minute.  
SC Roger.  
CAP COM Apollo 7, Houston.  
SC Roger.  
CAP COM I have a couple of questions. First,  
I'd like to know if you did a COAS calibration back on the  
second day during the rendezvous?  
SC Negative.  
CAP COM Roger.  
SC Wait a minute, Donn did one before the  
rendezvous.  
CAP COM Okay, fine, that's good, thank you.  
SC Do you want the numbers on that or did  
you lose them?  
CAP COM Ah, stand - I'll wait until they ask  
you for it in here. Apparently they just want you to know  
if you've done it. Ah, second point, have you done a P-53  
and a P-54 using the COAS?  
SC Negative.  
CAP COM Thank you.  
SC We probably almost had to (music) Do

SC you read.  
CAP COM Apollo 7, Houston.  
SC (music - cutting out) alignment the  
target is to the right one degree and up one degree.  
CAP COM Right, one degree and up one degree.  
SC Right, one degree and up one degree.  
Basically that means there's a space across left one degree  
and down one degree to be aligned.  
CAP COM Rog.  
SC On the target.  
CAP COM Right.  
SC ... the target shows up in the Northeast  
corner.  
CAP COM Target shows up in the Northeast corner,  
right.  
SC Okay. (pause) ... Cap Com.  
CAP COM Say again.  
SC ... Cap Com.  
CAP COM Rog, go.  
SC Rog, on power up we had .8 degrees per  
second in yaw to the right, zero in roll, and zero in pitch.  
CAP COM Rog, .8 degrees second yaw right, zero  
roll, zero pitch.  
SC That's correct.  
CAP COM Also, we have been monitoring the power  
load here, the Delta is about 300 watts, we would like to  
bring up inverter three to Main A, but don't put on either  
buss. This will give you an additional 100 watts.  
SC Roger, you want to run that inverter  
with that load then for the next 4-1/2 hours, huh?  
CAP COM That's affirmative.  
SC How about what if we powered up the G&N?  
CAP COM Ah, stand by. (pause) The G&N isn't  
cool with the secondary loop.  
SC That's a good point. (pause) Inverter  
three going on Main A.  
CAP COM Rog. (pause) Apollo 7, Houston, one  
minute LOS Honeysuckle, Huntsville low elevation pass at 21,  
Guaymas at 25.  
SC Roger.  
PAO This is Apollo Control 187 hours 04 min-  
utes into the mission of Apollo 7. We're losing acquisition  
at Honeysuckle in Australia. Our next point of contact will  
be Guaymas, Mexico at 187 hours 25 minutes, correction, our  
next contact will be the Huntsville tracking ship at 187 hours  
21 minutes. Then we will have continuous acquisition with the  
spacecraft for some 22 minutes through Bermuda and at 187 hours  
and 04 minutes, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 187 hours, 21 minutes into the mission of Apollo 7. We're coming up on the Huntsville Tracking Ship now. We should have acquisition in about 10 seconds. Let's standby.

CAPCOM Apollo 7, Houston, through Guaymas.

SC Roger.

CAPCOM Apollo 7, Houston, write O2 tank 2 fans on 3 minutes and then off.

SC Roger, La Porte. Houston, we have canister - canister sixteen.

CAPCOM Roger, canister sixteen. Thank you.

SC Roger. We're coming up on how many... checks in.

CAPCOM Roger.

SC We haven't had much luck with this revised sleep schedule, Bill. It's been revised to fit the flight plan this way. We're all up and going at 2:00 in the morning Cape time. You understand why because we're trying to ...in for Saturday night, Monday night, excuse me.

CAPCOM Apollo 7, Houston, understand that last transmission had to do - something about a sleep cycle. We're still a bit low, com is not too good right now.

SC Roger. We're not having much luck with our sleep.

CAPCOM Roger, understand that. Apollo 7, Houston, opposite omni.

SC Roger. I think we'll still have a good show for you tonight, Bill.

CAPCOM Roger.

SC I have just finished with this one.

(garble)

SC Houston, do you still read?

CAPCOM Roger, Apollo 7, GO.

SC Okay, are you going to pass on our comments about a probable - I would like to put it that way - shirt sleeve reentry.

CAPCOM Roger, I have already passed that on.

SC Okay, I guess we'll talk about that the next watch.

CAPCOM Roger. Yeah, we've been talking about that for a couple of days in fact.

SC And I just got a real kleenex full. How did that consultant's idea come out?

CAPCOM Say again.

SC The consultant who said if we hadn't flown we probably would have gotten colds anyway.

CAPCOM No, I don't know.

SC (garble)

CAPCOM I don't know about that.

SC Yeah, okay then.

CAPCOM Now the gold team hasn't got to read any newspapers. We're all working.

SC (garble)

SC Are you going to rush home and watch the television show this morning, Bill?

CAPCOM No, I'm going to watch it from here this morning.

SC (garble). Is that show carried live every morning?

CAPCOM Right, it is, and we're - this shift goes through the television sequence this morning.

SC Really in there, huh?

CAPCOM Oh boy.

SC You're getting all the big ones; burn 5, television - how does that picture turn out over the commercial screen by the time it gets there?

CAPCOM It's pretty good. In fact, I was very surprised the first time I saw it; I was ready for something like what we saw at Intergrated and it turned out it was not difficult at all to recognize you, and I was really impressed with the quality.

SC I gather the recommendation is to move rather slowly.

SC Roger. Fast panning of course, you get sort of "burn in" on that vidicon, I guess. And if you move very slowly, it stays fairly sharp and of course the steadier you hold the camera, the sharper the images.

SC Very good.

SC Say Bill, this is Don. I called up several hours ago regarding some DTO's and I wondered if you could run it by again to see if we could come up with an answer.

CAPCOM Was this the one regarding the backup alignment?

SC That's right.

CAPCOM Don, the reading I have on that is they still would like to do both of them - the first one gives you a check on your GDC, and IMU both - you align the GDC and then you drag it over to an attitude and then you align the IMU and when you do the star check at that point, you get a gross attitude error from the time at which you started the process. The second DTO involves a GDC alignment to a known IMU, and this gives you a good handle on the error in the GDC alignment itself and this they think is going to give them information in properly evaluating the total error on the GDC and IMU alignment.

SC I can see the rest now but I think it's getting awfully pure.

CAPCOM Yeah, anytime we have to use the line we can try GDC line to it.

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SC Isn't that right?  
CAPCOM That's affirmative.  
SC Bill, what planet is that right next to  
the moon?  
CAPCOM Stand by.  
SC We are looking at it right now; you ought  
to walk outside. We are guessing Venus.  
CAPCOM I have a further - they are checking on  
it by the way. I have further information on this DTO. They  
are looking right now at replacing the backup IMU alignment  
with a P53 - P54 coas.  
SC That sounds more - that sounds a little  
more sensible to me.  
CAPCOM Okay.  
SC I thought you were building up to that  
with that coas check and all that good stuff.  
CAPCOM The planet is Jupiter.  
SC Jupiter? Oh.  
CAPCOM By jove.  
SC It's a real pretty sight; we got the sun-  
rise, "Yewpiter" and then the moon, all within about 8 degrees  
of each other. About 20 degrees. I can still see the moon,  
but Jupiter is out of sight and the sun is up. And they  
sparkle plenty.  
CAPCOM Thanks.  
CAPCOM Hello 7, Houston. The secondary coolant  
loop is still performing excellently.  
SC Okay.  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Roger. If Don is ready to copy, we have  
this change in relation to this DTO.  
SC Just a minute let me check.  
CAPCOM Yeah, I'll stand by.  
SC Go ahead. I can write it on the flight  
plan.  
CAPCOM Okay, at 191 plus 40 in the flight plan,  
you can delete the reference in the MCC update box there, re-  
garding a backup IMU alignment. And replace it with T aligned  
time for P54. Just T align for P54.  
SC Okay.  
CAPCOM And at 193 hours, delete IMU backup  
align and reference to sextant star check at 193 plus 30;  
don't need to write that down I don't think - with P53/P54  
IMU backup align with coas.  
SC Roger.  
CAPCOM And this is merely a note - recommend  
P52 option - 3 at the station of sequence as a check; power  
down at completion of sequence. The approximate RCS consump-  
tion will be 3 to 4 pounds.

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SC  
CAPCOM

That's a nice prediction; okay.  
Yeah, that's it.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 18741 (CDT 5:45a) 563/1

SC ... okay.

CAP COM Okay and that's it. (pause) Apollo 7,  
Houston, one minute LOS Bermuda. Canary at 47.

SC Roger.

PAO This is Apollo Control, 187 hours 43 minutes into the mission of Apollo 7. During that pass we heard Apollo 7 Commander Schirra indicating they are not having much luck with their sleep cycles. Schirra so said he wanted to talk about a probable probable shirt sleeve reentry and that he would talk on the next shift, meaning the next shift here in the Control Center which comes on at seven o'clock in the morning Central Daylight Time. Schirra wondered about the television and asked if it was carried live and Cap Com Pogue indicated Yes it was. Schirra then asked How does the picture turn out, Pogue said Fine. Then there was some talk on the ECS environmental control system secondary coolant loop which is still performing excellently in the test that has been going on for several hours of that loop. It was also indicated that they'd like to use the crew optical alinement sight instead of the sextant in the IMU inertial measuring unit backup alinement which will take place later on in the mission today. We have acquisition at the Canary Islands coming up at 187 hours 47 minutes some two minutes from now, a little more than two minutes from now, we'll just stand by for that pass.

CAP COM Apollo 7, Houston through Canary.  
Apollo 7, Houston.

SC Go.

CAP COM Rog, Walt, I'd like to go over this relay comm mode test.

SC Roger, Bill, we've already done that once and we'll just do it the same way we did then, right?

CAP COM Well this is for USB UP and VHF DOWN.

SC Roger, ... this configuration for either one. ... instructions ...

CAP COM Apollo 7, Houston. Ah, Walt, they say the test didn't work last time and EECOM would like for me to go ahead and go through this check the way they have written it to see - to make sure they have covered all their bets here.

SC (garbled)

CAP COM Apollo 7, Houston. Opposite omni.

SC ... for you ... pass up the ... will you.

CAP COM Okay, you configure the center audio panel per side two EECOM slide rule, relay code, and in addition to that do the following. On the center audio panel, the CMP's, VOX Sensitivity thumb wheel to six.

SC VOX sensitivity to six.

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CAP COM S-band normal voice relay.  
SC Roger.  
CAP COM VHF AMA Duplex, VHF AMB OFF, and squelch  
B setting to five.

SC The only thing added ... is the squelch  
B setting to five and I think there's a ... in that last  
one, isn't there.

CAP COM Ah, Walt, we don't know what they had  
last time but we'd like for you to have it set up this way  
before Carnarvon acquisition and that will be at 188 + 21  
and we'll try to contact you on this mode for Carnarvon.  
We have a very brief pass by Tananarive at 06.

SC Understand, wilco.  
CAP COM Apollo 7, Houston, one minute LOS Canary,  
Tananarive at 06.

SC Roger.  
PAO This is Apollo Control 187 hours 53 min-  
utes into the mission of Apollo 7. We're now leaving Canary  
Islands acquisition on 119th revolution. We will be coming  
up at Tananarive at 188 hours and 06 minutes. This is the  
revolution where on the stateside pass coming over the  
United States, we will have a television dump. They will  
set up the TV, should be setting it up at 188 hours into  
the mission, they will turn the TV on at 189 hours and 02 min-  
utes into the mission, the TV pass will be 189 hours 04 min-  
utes through 189 hours 15 minutes. The pass should start at  
approximately 7:10 this morning Central Daylight Time.. At  
187 hours 54 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 18806, CDT 6:10a 564/1

PAO This is Apollo Control, 188 hours 6 minutes into the mission of Apollo 7. We're coming up now at acquisition time at Tannanarive, let's listen in.

CAPCOM Apollo 7, Houston through Tannanarive.

SC Roger. Houston, Apollo 7.

CAPCOM Rog.

SC Would you give us a map update right ascension star chart, please.

CAPCOM Rog, will. - REV 121 192 plus - stand by disregard that one. For REV 121 its 191 plus 4 niner plus 3 niner. Nodal crossing at 147.0 east. Right ascension for star chart update is 0233.

SC Roger understand sun will lift 2 hours and 33 minutes, right?

CAPCOM Affirmative. And for one - did you just want a star chart update.

SC No I wanted both.

CAPCOM Rog. then for -

CAPCOM Uh Walt, when you said you wanted that for two revs ahead did you mean to go to the second rev beyond like one, two, one.

SC Forget that, ...

CAPCOM Okay.

SC I don't think it matters that much ...

CAPCOM Okay, Donn.

PAO This is Apollo Control 188 hours, 14 minutes into the mission of Apollo 7. We've just lost acquisition at Tannanarive. Our next contact point will be Carnarvon, Australia at 188 hours 21 minutes. At 18814 this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 18822 (CDT: 6:25a) 565/1

PAO This is Apollo 7 Control, 18822. We have  
Carnarvon now.  
CAPCOM Roger; standing by.  
SC Do you want to do this relay mode now?  
CAPCOM Stand by.  
CAPCOM Roger, we are ready to do the test.  
SC Okay, I'll configure the switches then.  
CAPCOM Okay. Thank you.  
CAPCOM Carnarvon COM TECH, disable VHF uplink  
please.  
CAPCOM Carnarvon, Houston. Carnarvon COM TECH;  
this is Houston - do you read?  
CAPCOM Apollo 7, Houston; how do you read: Over.  
CAPCOM Apollo 7, Houston relay mode; how do  
you read? Over - Apollo 7, Houston. I am relay mode; how do  
read? Over.  
CAPCOM Carnarvon COM TECH; Houston. Carnarvon  
COM TECH, Houston; enable VHF uplink please.  
NETWORK VHF uplink enabled.  
CAPCOM Apollo 7; Houston; how do you read?  
CAPCOM Apollo 7; Houston.  
SC Roger Bill; how do you read?  
CAPCOM Roger. I read you fair and square; the  
test was satisfactory.  
SC Okay, thank you. (garble)  
CAPCOM Roger. Let's go back to the original  
configuration.  
SC Read.  
CAPCOM Apollo 7, Houston. Did you have your S  
band volume up during that test?  
SC My S band volume was not; I was reading  
you however.  
CAPCOM Roger; thank you.  
CAPCOM Apollo 7, Houston.  
SC Go Houston.  
CAPCOM I have been asked to pass on some helpful  
household hints here on TV improvement.  
SC Go ahead (laughter)  
SC Go ahead.  
CAPCOM (laughter) You sound pretty eager there.  
Right; one of the things they have mentioned is to remove  
the lens and blow the dust off the vidicon tube; second,  
clean the lens; third, the best quality is obtained with  
a fixed mount; fourth, they would like for you to try for  
some window views over Texas.  
SC I thought that the spacecraft motion over  
the ground precluded getting any good window views.  
CAPCOM I concur, I saw your attempts. I saw

APOLLO 7 COMMENTARY, 10/19/68, GET: 18822 (CDT: 6:25a) 565/2

one good shot of the Florida coast however, but I was just passing on this information.

SC Okay; we won't be in active hold today; and we'll plan it tomorrow.

CAPCOM Okay.

SC When we are drifting, it's almost impossible.

CAPCOM Roger; understand.

SC Okay.

CAPCOM Hey Wally, this is Jack.

SC Good morning.

CAPCOM Good morning, if you take any pictures of the ground, the camera has to be very, very still.

SC Understand. Think you will commence with the TV production?

CAPCOM No, I was just watching.

SC Okay. We'll follow the rest of the (garble).

SC There must be a great demand for this sort of thing, to get all these bits.

CAPCOM You just don't know how much of a demand there is.

SC We haven't decided yet whether that category is a preplanned series or a special.

SC Jack, by the way, who's doing the interiors for the (garble) now?

CAPCOM We missed that Wally.

SC Like Peter Hackett does on NBC, who does the interiors -

CAPCOM Apollo 7, Houston. S band volume up please.

SC We'll check the HF (garble) clear.

CAPCOM Yeah, we got some interference there also.

SC We got a bunch. Did you follow my last question?

CAPCOM No, I didn't Wally.

SC Typically, they show the interior of a spacecraft, they got a mockup, who is the announcer for the mockups?

CAPCOM I haven't seen any of the commercial television myself; the only television I've seen is when it comes over our monitor here.

CAPCOM And we are getting it live, and it's going out live through the networks.

SC Roger.

CAPCOM Apollo 7, Houston. We would like 02 tank 2 fans back off.

SC Okay.

SC There you are.

CAPCOM Thank you

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SC When you (garble) to 3 minutes, you really  
get them.

CAPCOM Roger; stir them up good.

SC Roger. Would you believe I have already  
said good morning?

SC Houston, are you deleting the hydrogen  
fuel cell purges?

CAPCOM Yes, all of them are deleted.

SC Roger.

CAPCOM We will schedule them when we need them.

SC Roger.

CAPCOM Apollo 7, Houston, coming up LOS on  
Hawaii at 50.

PAO This is Apollo Control, 188 hours, 38  
minutes into the mission of Apollo 7. We are coming up on rev-  
olution 119 during which Stateside pass we will have live television  
from the spacecraft. We would like to go back now and do  
a wrap up from 181 hours into the mission up to now. Every-  
thing was quiet up to 182 hours, correct that, 183 hours, 36  
minutes. The Spacecraft started on an -

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/69, GET: 18839 (CDT 6:42a) 566/1

PAO ... up to 182 hours, correct that, 183 hours, 36 minutes. The spacecraft started on an environmental control system secondary coolant loop test, which was in the flight plan. It looked good and it has remained on from that time on and continues to look good up to this time. At revolution 116, 184 hours into the mission, Astronaut Cunningham was talking about the biomed harness check. They have had a certain amount of difficulty with biomedical readouts here at the control center through the mission. Astronaut Pogue, the CapCom, indicated that the instructions were from the medics here to wrap tape around the leads for about 2 inches from the connect point. Astronaut Schirra, spacecraft commander, then indicated that he felt that they had gone far enough with the kluges, which means "make-shift" changes. He indicated that Eisele had a hot signal condition, and he indicated that they had reached the bitter end. They have done all they can do to make the biomedical harness work, and he said Eisele had a breakage and Schirra had a breakage, and he was a little concerned about continuing the onboard fixing of that particular system. At 184 hours into the mission Astronaut Schirra indicated that the problem for the day, in his opinion, was that they were very worried about colds and the possibility of rupturing eardrums on reentry. They were seriously considering reentering in shirt sleeves, and he also indicated that even if they did, they can still wear life vests, in case they had to get out of the spacecraft in the water. We had a unified S-band communication test, which was a back-up test and very successful. Schirra indicated that there was another small crack in the mission timer glass, the viewing glass. They noticed that after the SPS, the service propulsion system no. 5 burn, which took place yesterday. So there are a total of two cracks in the glass at this time. At 185 hours, 53 minutes we got a GO for revolution 135-1, which means through 134 revolutions of the Earth. For the spacecraft, all the systems were satisfactory. The coolant loop test continued to go in good shape. There were good fuel cell current readouts here at MCC. At 186 hours and revolution 118, the unified S-band back-up test took place satisfactorily. At 186 hours, 45 minutes, Apollo 7 indicated that they had taken one frame of photography of the Sharks Bay in the Carnarvon area and one frame of a town about 60 miles south of Carnarvon that they could not identify. Revolution 118, 187 hours, 25 minutes, Astronaut Schirra indicated that they were not having much luck with their sleep cycles. He said he wanted to talk about a probable shirt sleeve reentry and that he would talk about it on the next shift, which means the next shift here in the control center, which will take place in the next 10 to 15 minutes. Schirra asked a question, if television was carried live down here on Earth, and Astronaut Pogue answered yes. Schirra asked how does the picture turn out, and Pogue said fine.

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PAO                    At that time the secondary coolant loop was still performing excellently, as it has, as I said, all through the test. It was passed up to the crew that they would like to have the crew optical alignment sight used instead of the sextant for the initial measuring backup alignment test, which is scheduled a few hours from now. They went through a communications checklist and a relay node test, which turned out satisfactorily. On revolution 119, which is the current revolution, 188 hours, 21 minutes into the flight, Astronaut Pogue indicated that if it was at all possible on the television pass, we would like to have window views over Texas. At that time the crew indicated that it was likely not possible because of movement of the spacecraft. Apollo 7 also indicated that they were not quite sure which category they should go up for, whether it should be a week-long series or a special category. The current schedule for the TV is as follows: they have set up the television at 188 hours into the mission, the television will be turned on at 189 hours and 2 minutes, the television pass should last from 189 hours, 4 minutes through 189 hours, 15 minutes. At 188 hours, 45 minutes into the flight, coming up completing revolution 119 this is Apollo Control.

END OF TAPE .

APOLLO 7 COMMENTARY, 10/19/68, GET: 18850 (CDT 6:52a) 567/1

PAO This is Apollo Control 188 hours, 50 minutes into the flight of Apollo 7. We're coming up on a stateside pass, we should have Hawaii tracking station acquisition in a very few seconds. We'll then remain live through the stateside pass until we lose acquisition off the Florida coast. Let's join in on the conversation.

CAPCOM Apollo 7, Houston through Hawaii.  
CAPCOM Apollo 7, Houston through Hawaii.  
SC Houston, Apollo 7, you read, over.  
CAPCOM Roger, Apollo 7, how do you read?  
SC Fine, I heard your first call, Bill.  
CAPCOM Okay.  
SC (garble)  
CAPCOM Say again Apollo 7.  
SC Roger, when they go live with this television, do they carry the narrative too.  
CAPCOM Apollo 7, Houston. Give me a short count, please.  
SC Short count 1234554321 over.  
CAPCOM Roger, read you 5 square with a little scratch.  
SC That was an itch.  
SC If you could see the beards we have, you would sympathize.  
CAPCOM Roger. We aren't reading your VHF, we're picking you up on S-band.  
SC Roger.  
CAPCOM You might check S-band normal voice-to-voice and VHF MAMA to simplex.  
SC Roger. I confirm those switch positions.  
CAPCOM Right.  
CAPCOM Apollo 7, Houston. Opposite omni.  
PAO This is Apollo Control. We're currently still scheduling to turn the television at 189 hours, 2 minutes into the mission and for the live pass to begin hopefully with good quality at 18904, so we will be turned on some time around 5 minutes from this time. Apollo 7 inquired as to whether this was a live and narrative picture going out and the reply from CapCom Pogue was yes it was.  
CAPCOM Apollo 7, Houston, how do you read now?  
CAPCOM Apollo 7, Houston through Huntsville.  
How do you read?  
SC Fine, we're a little weak now, how about you.  
CAPCOM I'm reading you about 3 by 3.  
SC Roger, we'll turn the camera at 02 and we would like to hear a call from you when you are receiving the picture, so we can get the show rolling.

APOLLO 7 COMMENTARY, 10/19/68, GET: 18850 (CDT 6:52a) 567/2

CAPCOM  
you are CB.

Roger, understand. I'm ready any time

SC

(garble).

PAO  
just called and asked to be informed when we were receiving  
the television picture, because he wanted to get the show  
rolling and CapCom Pogue replied "Roger, anytime you're ready,  
CB."

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 18900 (CDT 07:02a) 568/1

SC Hey, Bill, do you read?  
CAPCOM Roger, go.  
SC Roger. I show that the tapes - okay,  
our tape is dropped and dumping. Do you want me to go off  
the tape and turn the TV switch on the S-band on?  
CAPCOM Roger.  
PAO This is Apollo Control. The Texas sta-  
tion acquisition will be 1890346. We are coming up now in  
acquisition with Guaymas, Mexico.  
PAO This is Apollo Control. The TV camera  
should be turned at this time.  
SC This is Apollo 7, do you read me?  
CAPCOM Roger, go.  
SC Do you have a picture?  
CAPCOM Negative. I'll give you a call as soon  
as we get one.  
SC Roger.  
PAO This is Apollo Control. The camera is  
on. Our TV pass is scheduled to start in some 35 seconds  
from now at 18904.  
CAPCOM Apollo 7, Houston. We are starting to  
receive it now.  
SC Roger.  
CAPCOM We can't quite tell the perspective here.  
Looks like we are looking at one of the couches.  
SC That is affirmative. Good morning,  
Houston, you are looking down at the couches. The crew is out  
just now for a coffee break. I think you will find that  
without the crew here there is absolutely nothing to fear,  
nothing to fear. This is a taped message.  
CAPCOM Is this a fully automated flight?  
SC That's affirm. At this point I would like  
to add, getting a close pan of the cockpit, the crew is out  
for a short break, so we will find them (garble). As we  
look across the couches, you will notice that the (garble)  
is in total instrument panel and then coming around the  
panel, you will note that we have full amount of (garble)  
under all conditions.  
CAPCOM That is an excellent picture right there.  
SC Roger. There is back lights in the  
panel as well as front lighting with flood lights. We are  
using flood lights now.  
CAPCOM That is very good.  
SC Looking at the heart of the spacecraft,  
as far as reference goes, the so-called FDAI, the flight  
direction attitude indicator. (garble) the attitude and  
adapt system is not operating, we are in drifting flight.  
Accorded with our entry monitor system, which we will use  
Monday evening, actually Tuesday morning, to return. The

APOLLO 7 COMMENTARY, 10/19/68, GET: 18900 (CDT 07:02a) 568/2

SC various switches you see here are for controlling various attitude thrusters and for monitoring the launch boosters. After that is another MC scan and you can view on this panel some of the (garble). On this portion of the panel, you see the DSKY, that is the display keyboard for our onboard computer. We use the computer for various calculations with earth orbit, navigation, and for aligning the inertial platform. Oh, I see someone is coming in now.

SC Good morning (garble) the display keyboard is another instrument identical to the one that Wally just described. The reason we have two, is that if one is down, we will have a backup. Also, we have two completely separate attitude reference systems, we can have one displayed on one ball and the other on a distant target. With that, I will pass the camera on down to the dump sheet hand.

SC Roger. Good morning to everyone in television land. You are looking at the right-hand portion of the main display console. The upper left hand portion of your view you will see the instrument that has to do with the cryogenics that are used to power the fuel cells and provide breathing oxygen to the spacecraft. Just beneath those, the round dials are devoted exclusively to environmental control system monitor functions and immediately below those, the switches which control the environmental control system. Moving on slightly over to the right, we have several meters which monitor the service propulsion system which we used during the burns we made the other day. I see we have another crewman coming in from his coffee break here and here comes, ladies and gentlemen, lo and behold, it is our navigator. He found himself. The camera here just briefly. We have a large number of switches at the bottom of this panel which have to do solely with communications. One of those switches you might be able to read, it is labeled TV and by turning that switch on, we started sending this picture to you. This instrument area is the quantity meter for our main propulsion system. It reads out to - tells the quantity remaining. And here comes a third member of our party, arriving, old (garble) himself. It is known in the (garble) of spacecraft talk that we have a crew commander. What is not known too well by many that we run a taut ship and to maintain physical discipline, as well as moral discipline, we carry on a close, order drill instruction period. At this time gentlemen, left face. About face, about, about face, crewman drift. As you can see, we have our lighter moments.

CAPCOM Oh, that's bad.

SC As you can see, our spacecraft has both lighter moments and moments of relaxation. We have

APOLLO 7 COMMENTARY, 10/19/68, GET: 18900 (CDT 07:02a) 568/3

SC one other motion that is called enforced march which might be indicative of the control we have in the new mode as we call it intravehicular activity or IVA. This is somewhat modernized over the older form of activity in EVA. Hup 2, you may be convinced that we have our ups and downs. We have got to get a new writer. Just a second, we will dolly in camera 2 and see what the erstwhile drill sergeant is doing. And there we have him, you can see, they are working very hard. Wally has been drilling his troops.

CAPCOM Yes, there we are.

SC Do you see the drill master here?

CAPCOM Right, we have a good picture again.

We lost it for just a minute.

SC Roger. We switched it off and dollied in camera number 2.

CAPCOM I see.

SC That's all technical talk among us television people.

CAPCOM They want to know what kind of dollies you have?

SC Not the right kind.

SC We are going to try to get another lens up. We are - were tempted to show you the outside, the recent good weather. We will get a long telephoto lens on it, at this time I will show you(garble) while Wally is digging out that lens. The weather is static, quite a few large cloud formations over the Gulf, if you will bear with us, we will change lenses and get an outside view.

CAPCOM Good show, Wally. The picture is exceptionally good today.

SC Roger. Camera is going on.

CAPCOM Right.

SC Okay, we are going outside. Do you want ALC out or in?

CAPCOM We want adjacent omni first. Stand by.

SC Okay. We are outside, cameras coming on.

CAPCOM ALC out, please. We do not have a picture.

PAO This is Apollo Control. Hopefully, we have about 2 more minutes of pictures coming through. At this time, we do not have a picture coming through.

CAPCOM We must be right on the fringe of reception. Try opposite omni, please.

PAO This is Apollo Control Houston. We still do not have further picture. We have about 1 minute 15 seconds left to go.

APOLLO 7 COMMENTARY, 10/19/68, GET: 18900 (CDT 07:02a) 568/4

CAPCOM Apollo 7, Houston. Confirm, you have turned the camera off.

SC Yes.

CAPCOM Roger.

SC Next time we will have to get better material or better writers.

CAPCOM We would also suggest better actors.

SC Our actor's equity demands more sleep next time.

CAPCOM Right.

SC We would have thought of a better plot but we didn't get enough sleep last night.

CAPCOM Okay, I get the point.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 18915 (CDT 7:17A) 569/1

PAO This is Apollo Control 189 hours 15 minutes into the mission of Apollo 7. We have just completed our television pass. We are passing out of the acquisition point for the Mila Merritt Island facility in Florida. We will have acquisition with Bermuda. Let's stand by.

PAO This is Apollo Control 189 hours 15 minutes into the mission. When the TV pass was made over Texas - over Houston - the spacecraft was sighted and we got an excellent visual contact with the spacecraft as it flew by.

CAPCOM Apollo 7 Houston. The secondary loop still looks very good, about 1 and a half minutes LOS. Tananarive at 41.

SC Roger Bill. Can you give us a readout on what our waste water quantity was at the start of this test and what we're showing now?

CAPCOM Right now the waste water quantity is 55.8 percent. Stand by for the previous reading.

SC Roger, at 183 40.

SC And Bill we welcome suggestions for tomorrow's bit.

CAPCOM Go

SC We need them.

CAPCOM I'm sorry you cut out. Say again.

SC We welcome suggestions for tomorrow's bit.

CAPCOM I'm sorry I didn't get that Wally.

SC We welcome a new script for tomorrow.

CAPCOM Oh, I'm sorry. Okay, I guess you've got as many ideas as we do. That was actually very good today. That was the best I've seen the picture. I thought the pictures of the instrument panel were very good.

SC I'd like to make another point. Any acting awards today?

CAPCOM I'm afraid to say anything.

SC Okay, if you're so smart you come up here and do it.

CAPCOM Hey, I welcome the opportunity.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68 GET: 18945 (CDT 7:50A) 570/1

PAO This is Apollo Control Houston 189 hours 45 minutes into the flight, and we've had a shift change here in the Control Center as you probably noticed. The severe weather conditions in the far west Pacific, that typhoon off the Japanese coast, has closed our normal -3 landing area, that zone about 250 to 300 miles south and east of the Japanese shore. We have temporarily moved - we've picked a new landing site in the west Pacific, a point about six or eight hundred miles north of Samoa. I do not know at this time what our ship or airplane configuration is in that area. We expect to get a reading from the recovery room very shortly, but the ships that had been assigned - the ships and planes that had been assigned to the western Pacific landing area have been directed to port or landing fields in Japan while the typhoon moves through the area. The Capsule Communicator put through a call, an establishing call, to Apollo 7 via Tananarive. It was simply a tag up. We've had no communication and we expect none. At 189 hours 47 minutes into the flight this is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68 GET: 19009 (CDT 8:14A) 571/1

PAO This is Apollo Control Houston at 190 hours 09 minutes into the flight. Just by way of passing, our retro-fire clock now shows 69 hours and 28 minutes. Apollo 7 came to us with an unusually clean communication by the ARIA aircraft, the tracking aircraft, in the middle of the Indian Ocean, and we have some tape on that, and we later tagged up with them over Carnarvon, and we're still - the spacecraft is now just about to leave the northeast Australian coast. In the course of this Australian pass Walt Cunningham noted, among other things, that the gunk - the brown gunky substance that coated the water pistol yesterday, which we reported on extensively, had over night turned to a rather salty coating. He didn't describe the color, but we would take from that, that it was white in color. A salty coating replacing the brown gunky material that was the subject of a lot of theories and speculation yesterday. He also reported that the water pistol is getting harder and harder to work. Apparently some physical difficulty in getting water out of the water gun. Cunningham doesn't note it in his communication, but there are at least two other sources of water onboard the spacecraft. The food preparation water has both hot water and cold water available, so for drinking they could simply tap in to the cold water tap on the food prep board. Here's an accumulation of the tape of our two last passes.

CAPCOM Apollo 7 Houston through ARIA.

ARIA ARIA 2 has 2-way lock. ARIA 2 has 2-way lock.

CAPCOM Apollo 7 Houston through ARIA

CAPCOM Apollo 7 Houston through ARIA

SC Garbled

CAPCOM Roger, Walt, you faded out also. We'll just stand by here on ARIA and pick you up at Carnarvon in a few minutes.

SC Okay I'm (cut out) pictures (cut out) millimeter. I've labeled the reels 1, 2, 3, 4, etc, and we'd like to (cut out)

SC Houston Apollo 7.

CAPCOM Roger, Walt, I got your comments on the 16mm film. You've labeled the reel 1, 2, 3, 4?

SC to the end - some of the reels overlap so we'd like to see them kept in that order.

CAPCOM Okay, Understand.

SC And they shouldn't be released until we take a look at them.

CAPCOM Okay.

SC This is the movies that we've taken onboard and I see you people are monitoring fuel cell 02 giving its usual daily ditty, huh?

CAPCOM That is affirmative.

CAPCOM Apollo 7, 1 minute LOS Carnarvon, Hawaii at 24.

APOLLO 7 COMMENTARY, 10/19/68, GET: 19090 (CDT 8:14A) 571/2

SC Roger, Jack, and I'd like to log that the water gun has become very difficult to work. The trigger is slowly getting very very hard to push, and retract mostly.

CAPCOM Okay, copy that.

SC And you remember yesterday we mentioned the chlorine injector, how it had a stuff in it?

CAPCOM Roger.

SC It died out over night, apparently, and it had the form of salts this morning. I guess it's the kind of water that maybe something didn't get in and gum up the works on this water pistol too. It's lasted - it's done very well up until now, but it's sure getting hard to work.

CAPCOM Okay, copy that Walt.

SC and log me 25 clicks of water, will you?

CAPCOM Okay.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19026 (CDT 8:30A) 572/1

PAO This is Apollo Control Houston 190 hours 26 minutes into the flight of Apollo 7, and the spacecraft is about to be acquired by Hawaii. A little bit more on the west Pacific weather situation. Two destroyers, two fleet destroyers, one called the Rupertus and the Tucker were called out of the west Pacific area southeast of Japan earlier this morning and were directed to Yokusuka Harbor. An intermediate landing area, a weather free intermediate landing area to the south and several hundred miles north of Samoa, near the Gilbert Islands, has been designated for revs 125 through 128, and it will be covered by aircraft from Tachikawa airport in Japan and also on the later revs from Samoa. Here is the crew getting the morning news.

CAPCOM Apollo 7 Houston through Hawaii.  
SC Roger. I'm planning to power back up the primary and shut down the secondary at 191:10.  
CAPCOM Roger, copy that, and I have the morning news for you here.

SC Okay, Jack, go ahead with the news.  
CAPCOM Okay. Hurricane Gladys is cutting across northern Florida, will probably head back out into the Atlantic. 72 airliners were backed up on the runways at Kennedy yesterday morning when the fog finally lifted. And in the Post this morning there is a picture of Jo and Harriet and Lo out in the early morning hours trying to spot your spacecraft as it went over (cut out) and there's been a big flap at the Olympics over a couple of black US athletes who made a racial protest while receiving their awards during the playing of the Star Spangled Banner. (cut out) The Olympic Committee dismissed them, and Ohio State plays Northwestern today and USC takes on Washington.

SC We'll be standing by for the results.  
CAPCOM Roger, we'll give them to you as soon as they come up.

SC Hey, Jack, log the LMP with 25 clicks of water.

CAPCOM Roger, another 25 clicks.  
SC Houston, Apollo 7, over.  
CAPCOM Go ahead Apollo 7.  
SC Roger. Jack, log the LMP with 25 clicks of water, will you?

GAPCOM Roger, I copied that before.  
SC Okay, would you mind telling Virgil True out at the Hawaii site that we got a good picture of Hawaii a couple of days ago.

CAPCOM Okay, will do.  
SC (garbled) plenty of pictures of Carnarvon coming.  
CAPCOM Copy that, Wally.

APOLLO 7 COMMENTARY, 10/19/68, GET: 19026 (CDT 8:30A) 572/2

SC Jack, when you have a minute, on those  
(garbled)  
CAPCOM Wally, I missed that.  
SC (garbled)  
CAPCOM Let's wait till we get - we're over  
the Huntsville - let's wait till we get through Guaymas here,  
and I think you'll be a little clearer.  
SC Very good.  
CAPCOM Apollo 7, How do you read?  
SC Very good, Jack.  
CAPCOM Okay, you are loud and clear now, Wally.  
SC No sweat (garbled)  
CAPCOM Okay  
SC Okay  
CAPCOM Okay, copied about the onboard movies.  
SC Okay, I'll have high classification put  
on there until the crew gets to review them.  
CAPCOM Roger, I have made special note of that.  
SC Very good, I think it would be (garbled)  
SSB-58 the outside pictures of the rendezvous and of the earth.  
(garbled)  
CAPCOM Okay, copy that.  
SC (garbled) as good as the movies that we  
took inside.  
CAPCOM I didn't get the last one, Wally.  
SC I'm afraid of one of our inside pictures  
being misunderstood.  
CAPCOM Okay, copy that.  
SC There's nothing embarrassing about them  
I just want to do them right before they release them.  
CAPCOM Okay.  
SC Very good.  
CAPCOM Apollo 7 Houston.  
CAPCOM Apollo 7 Houston, we are ready to  
perform the keying test now.  
SC Jack (garbled)  
CAPCOM Apollo 7 Houston, we are ready for the  
keying test.  
CAPCOM Apollo 7 Houston.  
SC (garbled)  
CAPCOM Okay Walt. Could you put your PMP power  
to OX and your S-band normal PCM switch to KEY, turn up  
your S-band volume and we're ready for the keying test.  
SC All set Jack, I'm going to key.  
CAPCOM Okay, go ahead.  
CAPCOM Okay, you got 100 percent today, and  
you can put your switches back to PCM and NORMAL.  
PAO Apollo Control here. That was Walt  
Cunningham getting 100 percent today on the telegraph keying

APOLLO 7 COMMENTARY, 10/19/68, GET: 19026 (CDT 8:30A) 572/3

PAO test which is done with the simple manual depression of the push-to-talk button on his voice communication circuit.

CAPCOM Apollo 7 Houston  
SC (garbled)  
CAPCOM 5 by. You might want to know how well the TV was received this morning. On all three networks you replaced all the kiddie cartoons.

SC (hearty laughter) (garbled)  
SC As I recall Kiddie Cartoons are on all three networks though.

CAPCOM That's right, you replaced all three of the Kiddie Cartoons on all three networks.

SC That's pretty strong.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19042 (CDT: 8:46a) 573/1

PAO You heard Wally Schirra being advised that he had preempted all the kiddie cartoons in the Saturday morning network, and they seemed to enjoy that tremendously.

SC Frame 38, magazine R is Dallas and frame 39 is the Mississippi River looking north.

SC Towards New Orleans again.

CAPCOM Okay.

PAO Walt Cunningham is popping pictures like an airborne tourist. Said he got a shot of Dallas, several of New Orleans, one looking up the Mississippi River towards St. Louis and Memphis.

CAPCOM Roger; it's inland now.

SC Yeah, it's in sight.

CAPCOM It looks like it's in the northeastern corner of Florida and it's heading - it looks like about 04 or 5 degrees.

SC We could more - can tell you where it is better.

CAPCOM I think you probably can.

SC It's pretty far north; I don't think there's much sense in getting a mark on it.

CAPCOM Roger.

SC Frame 42 is Gladys.

CAPCOM Copy.

SC It's getting a lot bigger, but not as violent I gather.

CAPCOM Wally, it's got 60 knots and it's supposed to increase as it goes out into the Atlantic.

SC Roger. I still know it for track 541.

CAPCOM Affirm; we are really plotting that carefully.

SC We are on that track right now; are we to do 641?

SC Roughly?

CAPCOM Wally, 1641 would have been a previous rev there.

SC So we're well south, yeah.

CAPCOM Yes.

SC I've got 260's on my mind I guess.

CAPCOM Roger.

SC We're trying to figure out whether we passed the duration of Gemini V yet.

CAPCOM We're gonna look that up.

SC How about a map update Jack?

CAPCOM Inland.

CAPCOM Okay, Walt, for rev 123, GET on the node 194 plus 50, plus 26, longitude will be 100.8 degrees east.

APOLLO 7 COMMENTARY, 10/19/68, GET: 19042 (CDT: 8:46a) 573/2

SC Jack, we had an interesting picture of  
Dallas. Two aircraft apparently going over Dallas at 6, and  
the contrails formed a wide open "V".  
CAPCOM Roger; copy.  
SC What was the time of that last map update  
time?  
CAPCOM Okay, 194 plus 50 plus 26.  
CAPCOM Wally, I'll give you a mark when you  
exceed Gemini V. It's about 5 minutes from now.  
SC Very good.  
CAPCOM You guys wouldn't want to try for Gemini  
VII would you?  
SC Negative. Negative. Hear that Deke?  
CAPCOM Yeah.  
SC Did you get my stories on the movies, Deke?  
CAPCOM Negative; Jack is going to brief me on  
it now.  
SC Very good. Sounds like you have a cold.  
CAPCOM Yeah, either you've got mine or vice a  
versa.  
SC Much laughter.  
SC We got 6 blocked ears up here. I'd like  
to have you talk to the guys about that reentry mode, Deke.  
CAPCOM Roger; we've been discussing that one.  
SC Very good. We're still pretty well  
stuffed up; I think the risk is greater on the ears than  
it is on - with no suits. We rehearsed in the couches this  
morning with the inflight coveralls and we will wear our  
comm carriers, of course, and we pitched down very well.  
CAPCOM Very good. I still think we would probably  
like to get the suit donning test at least someplace along here.  
SC I accept that, yeah. We are really worried  
about our ears because of the - by the time we get the helmets  
off then we really expect (garble) neck rings.  
CAPCOM Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19052 (CDT 8:56a) 574/1

PAO You heard Deke Slayton trading some good morning comments with the crew commander, and in the course of which it develops, Schirra would prefer - at least it sounded like he would prefer a coverall reentry opposed to the spacesuit reentry. There is feeling here in the control center, that at very least, we should do a quick don test. Here is more comm.

SC We really ought to (garble) if you like (garble) space for the next mission.

CAPCOM Roger, we agree there.

SC Our verbs are coming very well.

CAPCOM It sure looked like it from down here watching the data.

SC We've actually been cooler because the evaporator has been running more and controlling the lower glycol temperature.

CAPCOM Roger, copy that.

SC According to the update computer, the update took us about 5 minutes longer than the (garble).

CAPCOM 7 opposite omni, we didn't copy that last one Wally.

SC It took us about 5 minutes just to update it.

CAPCOM Okay, we got that. Walt, when you bring the primary evaporator back on the line here, we would like to have you open the back pressure valve for 2 seconds, monitor the steam pressure in the vap out temperature for 30 seconds, then go to AUTO.

SC Wilco.

CAPCOM Walt, can you confirm your PMP power switch in normal.

SC Okay.

CAPCOM Apollo 7, mark. You're now flying longer than Gemini 8.

SC Roger. I guess we got - man hours, that will take over 9 days. And I'm not sure how our compatriots stack up for total man hours.

CAPCOM Roger, copy that. I made a mistake, that's Gemini 5, I said Gemini 8.

SC Roger. No contest.

PAO This is Apollo Control Houston, 190 hours, 56 minutes and 33 seconds into the flight. This now is the second longest spaceflight in history. You heard one of the more talkative passes between Apollo 7 and this Control Center. The one just finished. One of the transmissions that might not have been fully understood because of some keying, was a comment from Schirra and backed up by some additional statements from Eisele to the effect that the emergency coolant loop was working very well. Eisele - Schirra noted that it should

APOLLO 7 COMMENTARY, 10/19/68, GET: 19052 (CDT 8:56a) 574/2

PAO                    pose no constraint to the next mission, Apollo 8. If anything Eisele said, it's providing more cooling. All in all, they are very happy with that. The total number of hours to do some further arithmetic means that the United States now has nearly 2600 hours of manned spaceflight time. Even closer would be 2570. Add 190 hours, 57 minutes into this flight. This is Apollo Control Houston.

END OF TAPE

PAO This is Apollo Control Houston with 191 hours 15 minutes into the flight. And it is that time in the flight when statisticians start combing the records books and doing comparisons with other flights. Several have been passed to us. For instance, this flight, if it goes the full duration, will exceed even Gemini 7's total manned hours logged. Gemini 7, in duration, was 14 days, of course, but with two men aboard, Frank Borman and Jim Lovell. Their total inflight time was something on the order of 660 hours. This flight, with three men aboard, going 260 hours, would give us a total of about 780 hours. We have already noted the fact that it has surpassed Gemini 5's total time in flight, to become second in longest duration in space flight. And another item worth noting, perhaps, is this flight alone has already exceeded all of the Russian manned flight time manned experience in all of their various spacecraft. We, according to our records, we totaled that out at 532 hours and these three men are now - have something better than 570 hours. Via Ascension, we had this brief communication.

CAPCOM Apollo 7, Houston through Ascension.

SC Roger.

CAPCOM Opposite omni, 7.

SC Roger.

CAPCOM Apollo 7, 1 minute LOS Ascension. We will pick you up at Tananarive at 18.

SC Roger, 18 and you have got an echo on that one. Who is UCLA playing, Jack?

CAPCOM Stand by.

SC Check (garble) too, please.

PAO Apollo Control back here and we should acquire via Tananarive just any moment here. We should pick up in 30 seconds. Donn Eisele has gone to sleep according to the flight plan and according to the communications for the last 1/2 hour. That is a believable flight plan item. The BIOMED harness has been switched over to Walt Cunningham. According to flight plan, shortly after we pass Tananarive, the spacecraft will go into another night cycle and the crew will power up their onboard computer. We would assume that Walt Cunningham will be down there manning the navigation station. The usual navigator, Donn Eisele, is getting his rest. Still nothing via Tananarive. We will come back to you when the station has acquired. It is questionable whether we will get com, but if we do, we will be back to you.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19120 (CDT 9:24a) 576/1

PAO                    This is Apollo Control Houston, 191 hours, 20 minutes. Jack Swigert is about to put in a call to Apollo 7. I think he is going to pass on to them some more football games. We got some queries wondering who UCLA would play today. Walt Cunningham's a graduate of that August institution and for the record, they're playing California. We thought we got a query on Navy as well. We'll standby for this first call going out through Tananarive.

PAO                    Apollo Control here, apparently we are not going to try to reach the spacecraft through Tananarive. We will take the line down and come back to you, if by chance we get in touch by the ARIA airplanes over the Indian Ocean or certainly we'll get around to Carnarvon in about 15 minutes. At 191 hours, 23 minutes, Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19134 (CDT 09:39a) 577/1

PAO This is Apollo Control Houston 191 hours 34 minutes into the flight. We have tagged up with Apollo 7 through Carnarvon and an interesting conversation developed immediately. Walt Cunningham noted that the crew repeatedly had been able to see the Magellanic clouds, the clouds named for the explorer Magellan, which are prominent in the southern hemisphere and he said they had been able to see them before repeatedly. He said as far as he could recall, he didn't remember any other crews that had reported them. I think that would bear some checking, it seems to me that Gemini 7 saw those clouds, reported seeing them. One of the Gemini crews was given the specific task to look for them. Let's turn on the conversation now, as it is developing on the coast of Australia.

CAPCOM Apollo 7, Houston through Carnarvon.  
SC Roger, Jack. Hey, Jack, I'd like to make note that we have noticed on numerous occasions since the beginning of the flight, that we can see, quite plainly, the Magellanic clouds in the southern latitude.

CAPCOM Roger, copy that.  
SC I don't believe they have ever been spotted up here before.

CAPCOM Okay, Walt. We have got a nav vector we would like to send you and if you will go to accept and also I have a nav check for you.

SC We got to get the computer up first.

CAPCOM I thought you were powered up.

SC We will bring it shortly. I'll copy the pad reference. Go ahead, what is it?

CAPCOM Okay. The nav check pad, the time 193 + 10 + 0000 - 1829 + 091892400.

SC Roger. Say again the time, please.

CAPCOM Roger. 193 + 10 + 4 balls.

SC 193100000 - 1829 + 091892400, over.

CAPCOM Roger, that is correct, Walt.

SC We might not be able to get state vector in the computer until the next station, Jack.

CAPCOM Say again, Wally.

CAPCOM Apollo 7, opposite omni.

SC I said 2 now waiting to catch up the state vector.

CAPCOM Roger, stand by.

SC Okay, Jack, are you going to have time to send the state vector?

CAPCOM Roger, Walt. We've got about 4-1/2 minutes left with you at Carnarvon.

SC Okay, we are in accept. Send your message.

CAPCOM Coming up.

APOLLO 7 COMMENTARY, 10/19/68, GET: 19134 (CDT 09:39a) 577/2

CAPCOM And Walt, I have a key align time for P54 to give you.  
SC Roger, go ahead.  
CAPCOM Roger. That's 193 + 40, that is the key align for P54. We would not like you to key in this time prior to performing P53 though.  
SC Roger. Will load 193 + 40 + 00 after performing P53.  
CAPCOM Copy that. Walt, did you get the flight plan update to perform P52 IMU realign option 3 after the P54.  
SC Affirmative.  
CAPCOM Okay, could you record the side angle differences in the general torquing angles for us?  
SC Will do.  
CAPCOM Thank you.  
SC On the P52.  
CAPCOM 7, the nav update is finished, the computer is yours.  
SC Jack.  
CAPCOM Go ahead, 7.  
SC Nav check is go.  
CAPCOM Roger, we verify.  
CAPCOM Walt, can you confirm that inverter 3 is now off?  
SC Yes, I'm going to turn it off.  
SC Okay. Everything else is back in configuration, as before the secondary cold loop test. The primary evaporator did cycle down and operate for a while.  
CAPCOM Okay, copy that.  
SC Do you want to leave the primary evaporator on the line?  
CAPCOM Affirmative, Wally.  
SC Okay. It will probably end up drying out again.  
CAPCOM Okay, We are about 1 minute LOS Carnarvon. We will pick you up at Guam at - well, we won't get you there at Guam. It's too short a pass. We will pick you up at Hawaii on the hour.  
SC Okay. And you notice that fuel cell 2 seems to have stabilized out right at the caution and warning trigger line.  
CAPCOM Roger, we are following that real close.  
PAO That will wrap up the conversation by Carnarvon. At 191 hours 43 minutes, Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19206 (CDT 10:10a) 578/1

PAO This is Apollo Control Houston, 192 hours, 6 minutes into the flight. We've tagged up via Hawaii and we'll tune in on that conversation in a moment. Early today you heard discussion of the fuel cell data and we've pulled up the chart giving us the fuel cell status. The main item which keeps recurring in fuel cell conversation, is the temperature of fuel cell no. 2. Here is the way the temperatures look. Fuel cell no. 1 is running a temperature of 161 degrees Fahrenheit, fuel cell no. 2 - 177, which is near the red line, and no. 3 is running 162. All in all, the fuel cells are sharing the load very nicely, we have no concern over them, they seem to have plenty of operating gases. All in all, they are very productive. Here is the Hawaii comm.

CAPCOM Apollo 7, Houston through Hawaii.

SC Roger.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM On some questions earlier, UCLA plays California today and Navy plays Pitts.

SC Roger, thank you. What about that ole school of yours?

CAPCOM Oh, I didn't think that would interest you. On this relay test that we are going to do over Guaymas, when we get Guaymas AOS I'll tell you to go to the relay node, per the comm sliderule and then we will conduct it then.

SC Okay. Jack, are you going to be sending up VHF and receiving S-band or vice versa.

CAPCOM We're sending up VHF and receiving S-band.

SC Okay, I'll set Donn's panel up with VHF OFF and S-band TR, alright?

CAPCOM No - .

SC (garble) set up for you sending - for you receiving S-band and sending VHF.

CAPCOM Walt, the configuration we want is exactly the same one on the comm sliderule there.

SC Okay.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Wally, in view of the attitude problem - display that you had on ball no. 1 yesterday, we would like you to leave the FTAI select switch in the 1/2 position for the remainder of the flight.

SC (garble)

CAPCOM Okay.

SC (garble)

CAPCOM Well, we're just looking at it and we don't want anything to happen and lose display on reentry.

SC I've already considered not using (garble) on no. 2 ball (garble).

APOLLO 7 COMMENTARY, 10/19/68, GET: 19206 (CDT 10:10a) 578/2

CAPCOM Okay.  
SC Your GDC no. 2 on reentry.  
CAPCOM All right.  
CAPCOM Apollo 7, we are ready to perform the  
relay test, would you configure per the comm sliderule for  
relay node.  
SC Roger.  
CAPCOM Guaymas M and O, Houston CapCom.  
GYM Go ahead.  
CAPCOM Roger, Guaymas M and O. Would you disable  
your USB link. Can you verify your USB link disabled?  
SC Houston, Apollo 7.  
CAPCOM Go ahead 7.  
SC They are configured.  
CAPCOM Okay, Apollo 7, this is Houston on S-band  
for the USB relay test. Apollo 7, Houston performing the  
relay test, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 10, 9, 8, 7, 6,  
5, 4, 3, 2, 1. Okay, Apollo 7, the relay test is complete.  
It was an outstanding success. You can return to your normal  
comm configuration.  
SC Roger.  
SC Houston, Apollo 7, are you reading?  
CAPCOM Reading you 5 by, Walt.  
CAPCOM Walt, I have your block data no. 21 when  
you are ready to copy it.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET 1921600 (CDT 10:20a) 579/1

SC Go ahead, Jack.

CAPCOM 123 dash 4 alpha plus 295 minus 1620  
194 plus 50 plus 14 2813 124 dash 4 alpha plus 250 minus  
1635 196 plus 31 plus 45 3012 125 dash charlie charlie plus  
168 minus 1660 198 plus 09 plus 52 3079 126 dash alpha charlie  
minus 223 minus 0100 198 plus 43 plus 50 7088 127 dash alpha  
charlie minus 123 minus 0120 200 plus 17 plus 18 6447 128  
dash alpha charlie minus 020 minus 0180 201 plus 50 plus 35  
5824 end.

SC Read back follows, 123 dash 4 alpha plus  
295 minus 1620 194 plus 50 plus 14 2813 124 dash 4 alpha  
plus 250 minus 1635 196 plus 31 plus 45 3012 125 dash charlie  
charlie plus 168 minus 1660 198 plus 09 plus 52 3079 126 dash  
alpha charlie minus 223 minus 0100 198 plus 43 plus 50 7088  
127 dash alpha charlie minus 123 minus 0120 200 plus 17 plus  
18 6447 128 dash alpha charlie minus 020 minus 0180 201 plus  
50 plus 35 5824, over.

CAPCOM Roger, that's correct, Wally.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19226 (CDT 10:30A) 580/1

CAPCOM Go ahead 7.  
SC I do have the command module RCS temperatures  
about an hour ago. All sets were reading 50.  
CAPCOM Roger, thanks Walt.  
CAPCOM Apollo 7 Houston, we are 1 minute LOS  
Antigua, pick you up at Ascension at 38.  
SC Roger  
PAO This is Apollo Control. That apparently  
wraps up the communication via Antigua. We've been looking  
at the spacecraft temperatures and such this morning here  
at the conclusion of that long stateside pass, and according  
to Antigua data here's what we have. We have a cabin  
pressure of a rock solid 5.1 pounds. I don't think it's  
deviated off that for days. The cabin temperature is 65,  
that's a couple of degrees lower than what we've seen the  
last few days as I recall, and the oxygen quantity in pounds  
tank 01 showing 46 pounds, tank 02 showing 45. Our flow  
rate is like .2 pounds per hour and that is a very steady  
value. And the last biomed data which we got, which I  
think was on Walt Cunningham, shows a nice steady mean  
heart rate of 62, a very restful heart rate, with a high  
range of 74 and a low of 56, and Walt Cunningham is breathing  
at a rate of 18 respirations per minute. At 192 hours  
32 minutes into the flight this is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET 1924800 (CDT 10:52a( 581/1

PAO Apollo Control, Houston, at 192 hours  
48 minutes. Via Ascension we had some discussion with  
Walt Cunningham about pictures and he requested some infor-  
mation from some of the weather experimenters on what kind  
of filters he should use on future shots. Here's how it went.

CAPCOM Apollo 7, Houston, through Ascension,  
standing by.

SC I read you loud and clear.

CAPCOM Roger, Wally. Go ahead Apollo 7. Copy that.

SC We have more pictures with the red filter  
off, but apparently they're fairly (garble) red colors.

CAPCOM Okay, it is in work.

SC 331 000 50 dash 204. There's a  
Hasselblad 50 series.

CAPCOM Okay.

SC Jack, you better check with Helmut  
Kuehnel on the color correction for that. It sounds like  
a pretty good (garble) but it may be pretty hard.

CAPCOM Okay, wally.

SC Houston, Apollo 7.

CAPCOM Go ahead 7.

SC Roger, the (garble) is just barely  
bright enough for tracking against the clouds. I am not sure  
it would be acceptable.

CAPCOM I didn't get the first part, Wally.

SC The COAS sight. It's so dark it just  
barely shows. I'm not sure it's bright enough for tracking  
various objects.

CAPCOM Okay.

CAPCOM 7, we're 1 minute LOS Ascension. We pick  
up Tananarive at 54.

SC Roger.

PAO This is Apollo Control back again. We  
have from the recovery forces received some information re-  
garding the WESTPAC recovery zone, which we indicated earlier,  
is out of business due to the fact that a typhoon is moving  
through the area. Just to give you some feel for the extra-  
ordinary planning involved in these recovery tasks on a  
rev by rev basis, our recovery forces worked out a planned  
primary landing areas, and a planned secondary areas for  
each of four revs that we feel sure that the WESTPAC area  
will be out of business. In other words, we could not land  
in WESTPAC and we have gotten from them eight alternate landing  
areas. The range on these alternate landing areas is fantastic.

APOLLO 7 COMMENTARY, 10/19/68, GET 1924800 CDT 10:52a 581/2

PAO Some of them are in the, in fact, about half of them are in the South Atlantic, in the area around the Ascension Islands. On rev 125 for instance, if trouble developed that would indicate normally a Western Pacific landing, we would bring the spacecraft down near Hawaii, which is accessible on that particular rev in an area just south of Hawaii. On rev 126 should trouble develop we would, rather than land it in the typhoon stricken area, bring it down at about 22 degrees south 10 degrees west, very near Ascension Island in the South Atlantic, and so forth. Just an indication of the extraordinary range and flexibility of our recovery forces and some of the planning detail they get into. HC130H aircraft of the Aerospace Rescue and Recovery Service out of Tachikawa, Pago Pago, Samoa, Anderson, Guam, and Ascension Islands in the Atlantic will be involved in these -- in the manning of shifted or alternate recovery areas that are under discussion here. At 192 hours 52 minutes this is Apollo Control, Houston.

END OF TAPE

PAO This is Apollo Control Houston 193 hours 21 minutes into the flight. Over Tananarive a few minutes ago, we had this conversation, and very shortly we should acquire via Guam. Let's hear the Tananarive tape first.

CAPCOM Apollo 7, Houston through Tananarive.

SC Roger.

CAPCOM Wally, on your question on Panatomic-X film and the red filter, Weather says that they agree with your decision to use this film photographing clouds with the red filter on there. They do request that land, water, and clouds be included in the pictures that you take.

SC Roger. Will do (garble).

CAPCOM I couldn't copy that, Wally.

SC (garble)

CAPCOM We couldn't copy that, Wally. We will pick you up over Guam.

CAPCOM Apollo 7, 1 minute LOS Tananarive. We will pick you up at Carnarvon at 10.

COMM Goddard voice, will you disable Tananarive.

CAPCOM Apollo 7, Houston through Carnarvon, standing by.

SC Stand by.

CAPCOM Apollo 7, 1 minute LOS Carnarvon, Guam at 21.

SC (garble)

CAPCOM Copy that.

SC You are reading our DSKY, I assume.

Did you get the start of the numbers on program 53?

CAPCOM Negative, Wally. You went through that before we had data.

SC Okay, 2 balls 18.

CAPCOM Copy.

PAO Apollo Control here. At just any second now we should hear a call going out via Guam. We have been watching that fuel cell number 2 temperature. It has continued to climb and it is up to 183, now, 183 and we are really not concerned about it though, because we have reached that part of the day where we are going to start powering down the equipment and we are rather certain it will follow the course it has followed the last few days and that temperature will recede very quickly when the equipment is taken off line. The flight plan calls for the next rev, which will be the 123th rev, to do an IMU realign in the South African area, Pretoria and Tananarive zone. Here goes the Guam com.

SC Roger. Planning program 52 to now check our error.

CAPCOM Okay, Wally.

APOLLO 7 COMMENTARY, 10/19/68, GET: 19321 (CDT 11:25a) 582/2

SC The star angle difference in 54 was  
3 balls 26, and the torquing angles we put on the tape,  
they were 2 balls 8 something, 2 balls 8 something, 2 balls  
9 something.

CAPCOM Roger.  
SC (garble) we really have now. You (garble)  
CAPCOM Okay.  
SC (garble)  
CAPCOM Roger.  
CAPCOM Apollo 7, Houston.  
SC Roger.  
CAPCOM Wally, what option did you select when  
you did P52?

SC We took two. Star angle difference  
4 balls 1, torquing angles were -2 balls 199 + 3 balls 64  
+ 3 balls 93. (garble)

CAPCOM Stand by one.  
SC That's about 2/10ths of a degree off.  
CAPCOM Copy.  
SC I hope once and for all they have in-  
dicated what the heck a COAX is for.  
CAPCOM Roger, Wally. Just a minute, we are  
having some discussion down here.  
SC If you have a check, we are off about  
2/10ths of a degree.  
CAPCOM Roger.  
SC Did you copy my general torquing angles  
I read down?

CAPCOM Affirmative, Walt.  
CAPCOM Apollo 7, Houston.  
SC Go ahead, Jack.  
CAPCOM Okay, Wally. We are having some discus-  
sion down here on whether we need to redo that P53 so we  
are requesting that you do not power down until we get back  
to you. Secondly, we would like you now to switch to the  
secondary tanks on quad delta.

SC Roger.  
CAPCOM Okay and while you are up there, could  
you give me a batt C voltage readout?

SC Jack, we are kind of blacked out up  
here if you could hold on that one.  
CAPCOM Okay, no problem, there is no hurry.  
SC Okay.  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Roger, Wally. Just a minute.  
SC (garble) as soon as you get your head-  
set on, he will start talking.  
CAPCOM Okay.

APOLLO 7 COMMENTARY, 10/19/68, GET: 19321 (CDT 11:25a) 582/3

SC You reading my DSKY?

CAPCOM Roger, 4 balls 1.

SC Okay, I just doing a final line check.

Now what were you about to give me?

CAPCOM Okay, just going over the hill here.

The brown material that you see there and the subsequent salt development was observed on 2TV1. What we are doing is recommending that the material be wiped off the injector and the wiping cloth stowed for observation when you get back down and the chlorination proceed as per scheduled in the flight plan.

SC Okay. We note that it crystallized out today. It is a white powder all over the place. I suspect that this stuff is just hard to (garble) through.

CAPCOM Roger, copy that.

PAO That probably wraps up the communication via Guam, although the signal is unusually sharp and clear. That is one of the signals that is relayed to us via communication satellite, of course, and it is one of our most dependable throughout the entire flight. The data is excellent, so is the voice communication. Our orbital elements this morning are 240 miles apogee by 90 miles perigee. And while we were over the Guam circle during that recent pass, the spacecraft was at an altitude of 210 miles down to perhaps 175 when it left. It is now between Guam and Hawaii. We should acquire via Hawaii in 4 minutes. We will be back to you then.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19338 (CDT 11:43a) 583/1

PAO This is Apollo Control Houston. Via  
Hawaii, we're having this conversation.

CAPCOM Apollo 7, Houston through Hawaii.

SC Roger Houston.

CAPCOM Roger, Wally, we've looked at the data,  
and you can proceed with the power-down.

SC Roger. Did you get the reason I'm doing  
the option 2 instead of 3 in 52.

CAPCOM Negative Donn, I guess you went over the  
hill too fast.

SC Well, the reason I did that - see, if  
we did no. 3, all we would have done is find a line to the  
(garble) determined in 54. That wouldn't tell you how ac-  
curate 54 was. It might give you some idea on how accurate  
the star (garble) angle was, but you would get - by doing  
52 (garble). I got a comparision (garble) between it and the  
one determined in 54.

CAPCOM Okay Donn, we're discussing that down  
here.

SC Okay.

CAPCOM Opposite omni, 7.

SC Jack, do you understand our bit of  
logic there?

CAPCOM We've got all of the data we need, Wally.  
There's some discussion on that, going back and forth here,  
but we've got all of the data we need.

SC Okay, just have them check (garble) we get  
out of 54, the (garble) we compared to 52, and the technique  
with option 2 and 3 on 52.

CAPCOM I see some shaking of the heads, but we  
copy.

SC Jack, before we quit, I did do an option  
3 on that thing.

CAPCOM When did you do an option 3?

SC After the two option 2's.

CAPCOM Okay.

SC (garble) to the problem.

CAPCOM Could you give me a bay - bat C voltage  
readout, when you get a minute. I have a flight plan update  
here.

SC Bat C is 36.0.

CAPCOM Copy.

SC Go ahead with your flight plan update.

CAPCOM Okay, we want to do a fuel cell O2 purge  
at 195 plus 00.

SC Roger, proceed.

CAPCOM Okay, that's it.

SC Okay.

CAPCOM Apollo 7, we would like you to delay the

APOLLO 7 COMMENTARY, 10/19/68, GET: 19338 (CDT 11:43a) 583/2

CAPCOM power-down. We're going to have a NAV  
load for you.  
SC Going too slow. (garble) going around  
Houston.  
CAPCOM Okay, we'll be ready for you in just a  
minute. Wally, I would like to get some feel from you on  
how long it would take you to doff suits.  
SC To doff the suits.  
CAPCOM Roger.  
SC You have to understand the reasoning  
behind our (garble). I can cut it off or I can take it off.  
CAPCOM When you were inserted and you got -  
you doffed the suits, about how long do you figure it took  
you to take it off and stow them?  
SC Do you mean in the start of the mission?  
CAPCOM Affirmative.  
SC (garble) the suit off to protect it and  
you put it away very carefully. I'd say it took about 30 to  
35 minutes.  
CAPCOM Okay, copy that.  
SC Wait a minute, wait a minute.  
SC Well Jack, what we did, we did it in  
stages. We took the helmet and gloves off after the word  
GO, and then the suits off after 17 or 16 1.  
CAPCOM Wally could you go to ACCEPT and we'll  
send this load up.  
SC We're going to get squared away on this  
in just a second.  
CAPCOM Okay.  
SC Okay, we got it now Jack.  
CAPCOM Okay, coming up. I'll read you the  
NAV check when you are ready.  
SC Okay. Go ahead now, Jack.  
CAPCOM Okay, time 199 plus 30 plus 4 balls plus  
158 niner plus 058531875.  
SC Roger.  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Roger, we would like you to standby on  
any power-down till we pick you up in Guaymas.  
SC We've already power-downed Jack, do you  
want me to bring it back up?  
CAPCOM Negative, we didn't quite finish the  
NAV load. We want to pick it up here at Guaymas.  
SC Okay. computer still going.  
CAPCOM Roger.

END OF TAPE

APOLLO 7 COMMENTARY 10/19/68, GET 19348 (CDT 11:53A) 584/1

CAPCOM Apollo 7 Houston.  
SC Go ahead, Jack.  
CAPCOM Okay, we verified the load that we sent  
up and the computer is yours, you can go ahead and begin  
powering down.

SC Okay.  
PAO Apollo Control here. I just got a report  
from guidance and navigation officer that our total expenditure  
of fuel - of propellant - forgive me, for the day is 14 pounds  
of propellant. We've still got an open line to the spacecraft  
via Guaymas and should hold them for another 5 to 10 minutes.

SC Okay, Jack, we've alined.  
CAPCOM Okay fine, good news.  
CAPCOM Apollo 7 Houston 1 minute LOS Texas,  
Ascension at 17.

SC Roger  
PAO That will probably wrap up the communications  
via Texas site for this rev as we proceed now in the last  
few moments of the 123rd revolution around the earth. I  
believe that's 123, it's a little hard to make out here on  
the wall map, no, it's 122. I'm sorry. We - in just a  
very few minutes will cross the 80th parallel to begin rev 123.  
At 193 hours 58 minutes into the flight, Apollo Control Houston.

END OF TAPE

PAO Apollo Control Houston here at 194 hours,  
20 minutes. Via Ascension we have this conversation.  
CAPCOM Apollo 7, Houston through Ascension.  
S/C Roger, reading you loud and clear.  
CAPCOM Wally, you're loud and clear also.  
SC Roger.  
CAPCOM Wally, one point. Because of the visi-  
bility problem that we've had in window number 3, if you'd  
like, we have some simple instructions which would provide  
you with 55 and 90 degree roll lines on window number 2.  
SC It's cleared up enough to where we can  
(garble) the center the last couple of days. But we can  
live with it. We can't shoot pictures out of it or see de-  
tail out of it.  
CAPCOM Roger, Okay, real fine. Copy that.  
SC Are we on FM?  
CAPCOM We're transmitting both.  
SC Okay, (garble) bank angles on reentry.  
CAPCOM Okay, copy that, Wally. We're 40 sec-  
onds LOS Ascension, and we pick up Tananarive at 29.  
PAO Apollo Control here. That concluded  
the conversation by Ascension. This morning we had a great  
number of requests for a repeat performance of the television,  
the video pass. We have it on our tape machine and we're  
planning to rerun it for our News Center monitored cameras,  
for our News Center receivers, at 1:00 this afternoon, Houston  
time, about 35 minutes from now. I say again, we will rerun  
the video tape this morning. We have the audio track on it.  
It was a particularly enlightening tape and it was not with-  
out its humor. It will be shown at 1:00 this afternoon on  
the NASA News Center monitors. This is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 1942940 (CDT: 12:34p) 586/1

CAPCOM  
Standing by.

SC

CAPCOM

SC

Tananarive.

CAPCOM

SC

CAPCOM

The Mercury is 54.

SC

Apollo 7, Houston through Tananarive.

(garble) through Tananarive yet?

Say again.

Checking to see if you could hear through

Roger, we are reading you. 5 by.

Fine here.

Apollo 7, Houston. 1 minute LOS Tananarive.

Thank you.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19456 (CDT 1:00P) 587/1

PAO                    This is Apollo Control Houston 194 hours  
56 minutes. We've got a scheduled acquisition here of the  
Mercury ship just momentarily, but because we had promised  
to replay the television pass of earlier this morning we'll  
go ahead and play that tape and then we will tape the audio  
communication via Mercury and play it for you at the conclusion  
of this video presentation. This is Apollo Control. go  
ahead and roll the tape if you would, the video tape.

TV PASS REPEATED

PAO                    And we have now the taped conversation  
via Guam. We'll play that for you.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19507 (CDT 1:11p) 588/1

PAO And we have now the taped conversation  
by Guam, we'll play that for you.  
CAPCOM Apollo 7, Houston through the Mercury,  
standing by.  
SC Roger.  
CAPCOM Apollo 7, opposite omni.  
SC Hey Jack, are you still there?  
CAPCOM Roger, Walt, go ahead.  
SC Roger, if you get a chance, maybe we could  
get an undated RCS number for our chart.  
CAPCOM Okay.  
CAPCOM Apollo 7, Houston.  
SC Go ahead Jack.  
CAPCOM Roger, your chart value for RCS today  
Walt, is 588. It shows a little bit larger usage than we  
expected and we can't account for it at this time. We're  
going back over the data and looking at it.  
SC Roger.  
CAPCOM Apollo 7, Houston.  
SC Go ahead, Jack.  
CAPCOM Just for the record, you might help us  
out and give us some clues about how much you think you used  
today.  
SC Oh, I don't really know, I think all  
we did was (garble) pictures (garble) on that. We did the  
alignments and a little (garble) and then the maneuverings  
of the alignments.  
CAPCOM Okay, copy that. We're about 1 minute  
LOS Guam. We'll pick up Hawaii at 13.  
SC Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET 1951700 CDT 1:21p 589/1

PAO Apollo Control, Houston, 195 hours  
17 minutes. Through Hawaii we're having this conversation.  
CAPCOM Apollo 7, Houston through Hawaii standing  
by.

SC Roger, Jack. Need a map update if you  
can get it and I'd just as soon have one. If not two revs  
ahead, if you can get it.

CAPCOM Sure can. In work.

SC I took a weather picture at 195 hours  
and 13 minutes, magazine V as in Victor frame number 14.

CAPCOM Okay, copy that, Walt. When would you  
like the map update? This rev?

SC Yes, the next - send it now if you have it.

CAPCOM Okay, Walt. The GET of the next sending  
node rev 124 will be 196 plus 20 plus 48 with a longitude  
of 77.7 degrees east.

SC Roger.

CAPCOM Apollo 7, Houston. One minute LOS Hunts-  
ville. Tananarive at 196 plus 05.

SC Thank you.

HTV Huntsville LOS.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19618 (CDT 02:23p) 590/1

PAO                      At 196 hours 18 minutes into the flight, we've had only a tag up through Tananarive with the crew in the last 1/2 hour or so, no active communication, nothing - no tapes to pass on. We have also had a meeting around the Flight Director's console, and couple of actions have been taken. For one, it's been determined the pilots will wear their space suits on reentry, the matter of whether they will put the helmet and gloves on is still open - I mean it's still under consideration. Our programed TV time for Sunday morning has been altered. It had been planned to do it at 8:30, the time has been moved up to 7:14 am Sunday morning, 7:14 am will be Corpus acquisition and it's scheduled as a television pass. Other activities remain pretty much as flight planned as we see them right now. Our next acquisition should be the ship Mercury in perhaps 10 minutes. At 196 hours 20 minutes, this is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19630 (CDT 2:35P) 591/1

CAPCOM Apollo 7 Houston through the Mercury  
standing by.  
SC Roger, Jack, we've got a readout a line.  
(garbled)  
CAPCOM Walt, we don't have data yet from the  
Mercury. Stand by.  
SC Houston Apollo 7.  
CAPCOM Go ahead Wally.  
SC I assume from the radar transponder  
test that we successfully completed that we do not required  
doing that again. Is that correct? Are we going to back  
up in case the first one fails?  
CAPCOM Wally, you are correct in that assumption.  
We're going to have a general update on tomorrow's activities  
for you over Hawaii.  
SC Okay.  
CAPCOM Apollo 7 Houston, opposite omni.  
SC Roger.  
CAPCOM Apollo 7 Houston. We're ready to read  
that out - the 02 manifold pressure out.  
SC We have -  
CAPCOM We have 102 now.  
SC Okay, try again.  
CAPCOM Roger 105.  
SC Have you done the comp on the check as go?  
CAPCOM Roger.  
CAPCOM Apollo 7 opposite omni.  
CAPCOM Apollo 7 Houston 1 minute LOS Guam, Hawaii  
at 49.  
SC Roger, Jack. What are you going to do  
with your week end, Jack?  
CAPCOM Oh, I think I'll just hang around mission  
control.  
SC They'll give you a lot to do.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19649 (CDT: 2:52p) 592/1

PAO Apollo Control Houston here, at 196 hours, 49 minutes. And we are about to acquire by Hawaii. It should be an important discussion in that it will cover the flight plan updates for the next several days. The flight director has just cautioned everybody to turn out any outside interference and pay a close ear to this discussion. Here goes the first call.

SC Hey Jack, give the LMP 15 clicks of water.  
CAPCOM Okay, I am logging that Walt.

Is Wally monitoring?

SC Yeah, he's monitoring.

CAPCOM Okay, just generally, on tomorrow's activities, we are going to tailor them to accomplish the objectives based on what we know to date. We are going to remain above the service module RCS DAP redline, and we'll curtail any activities to remain so. Basically what we are going to do, and this is generally, because the exact times they are still working on. We are going to delete the rendezvous radar test during tomorrow; we are going to perform burn 6 as per the normal flight plan and in that period from 211 to 219, we are going to have the following 4 activities. Two revs of orbital navigation, using the 9 by 9 W matrix, one PTC test; it will be just like the preceding test except it will be about the pitch axis there; we are going to do the pitch instead of a roll. And in 1 P22 horizon sighting test for horizon definition and generally for the television tomorrow, basically with the activities that are planned, we felt that if you just turn it on, and proceed with your regular flight plan activities, that would be fine.

SC Okay, (garble) and just let it go.

CAPCOM Okay, and some information has come about the discussion on - the reentry configuration. Right now the thinking is to have the suits on for entry, to provide a heel restraint. The helmets and glove question is still in question.

SC Hey now that's pretty immature; we were going to launch without that kind of special heel restraint. And then all of a sudden they got worried about land landing and they put it in. If you are worried about a water landing the heel restraint, we got a long way to go before we can call this thing a flying machine.

CAPCOM Hey, Wally.

SC Yeah.

CAPCOM You did have heel restraint before anyway and I think the only concern here is that if you do get a tumbling even on the water your legs can end up flailing around and that clearance between your heels and the MDC as you remember has always been a bit of concern. Think it's just an attempt here to make darn sure you don't have some

APOLLO 7 COMMENTARY, 10/19/68, GET 19816,(CDT 4:10P) 593/1

PAO This is Apollo Control at 198 hours 16 minutes. Apollo 7 has had passes at Tananarive and the tracking ship, Mercury, during the news conference. At each sight, we notified them that we were standing by and there was no conversation at either of those sights. One bit of information on the Mercury reports now experiencing heavy sea states number 6, waves 15 to 16 feet, rolling up to 20 degrees. However, we were still able to get telemetry data during this pass, despite the rough weather that ship was experiencing. Crew condition described as green. The next station will be Hawaii at 198 hours 25 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 1982500 (CDT 4:30P) 594/1

PAO This is Apollo Control at 198 hours  
25 minutes. Apollo 7 about to be acquired over the Hawaii  
station. Donn Eisele should be awake for this pass, with  
Wally Schirra and Walt Cunningham preparing for their sleep  
period. We'll stand by for conversation at Hawaii.  
CAPCOM Apollo 7 Houston through Hawaii standing  
by.  
SC Well, hello there.  
CAPCOM Good morning.  
SC How are you?  
CAPCOM Great. You're getting up earlier and  
earlier.  
SC Sure seems like it. What time is it?  
CAPCOM It's 4:30.  
SC Say it again.  
CAPCOM 1630.  
SC Oh, Roger. (garble)  
CAPCOM Apollo 7 Houston, opposite OMNI.  
SC Roger, I'll do that.  
SC All right, more data. 8 clicks of water  
for CDR and 5 clicks for LMP.  
CAPCOM Roger.  
SC And log me 7 hours of very fine sound  
sleep.  
CAPCOM Hey, great.  
CAPCOM Apollo 7 Houston.  
SC Go.  
CAPCOM Roger. Request 02 tank 2 fan on for  
5 minutes then off.  
SC Okay, It's on.  
CAPCOM LOS Redstone 40.  
SC Okay.  
PAO This is Apollo Control 198 hours 30 min-  
utes, Hawaii has LOS. Don Eisele sounding very chipper  
reported 7 hours of very fine sound sleep. Redstone will  
acquire Apollo 7 in about 10 minutes. This is Mission Control,  
Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19840 (CDT 4:45P) 595/1

PAO This is Apollo Control at 198 hours  
40 minutes. Apollo 7 coming up on the Redstone now.  
CAPCOM Apollo 7, Houston through Redstone,  
standing by.  
SC Roger, Houston.  
CAPCOM Roger, Apollo 7.  
CAPCOM Apollo 7, Houston.  
SC Go Houston.  
CAPCOM Roger. Verify 02 tank 2 fan off  
SC Roger, It's still on, I'll get it in a  
minute.  
CAPCOM Roger.  
CAPCOM Apollo 7, Houston. One minute LOS  
Ascension at zero 5.  
PAO Apollo Control at 198 hours 46 minutes.  
The Redstone has LOS as Apollo 7 nears the end of its 125th  
revolution. Next station will be Ascension at 199 hours  
5 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 1990600 (CDT 5:10p) 596/1

PAO                                    This is Apollo Control 199 hours 06 minutes  
Ascension has acquired Apollo 7. We'll stand by.  
CAPCOM                                Apollo 7 Houston through Ascension,  
standing by.  
CAPCOM                                Apollo 7 Houston, 1 minute LOS Mercury  
at 42.

SC                                     Roger.  
PAO                                    Apollo Control, 199 hours 13 minutes  
Ascension has LOS and there was no conversation. During  
this pass, we're in the period set aside for command module  
pilot, Donn Eisele to eat breakfast. The other two crewmen,  
Wally Schirra and Walt Cunningham, are in their sleep period.  
The Mercury will acquire Apollo 7 at 199 42 minutes. This  
is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 19942 (CDT 545p) 597/1

PAO This is Apollo control, 199 hours 42 minutes, the Mercury tracking ship is about to acquire Apollo 7, Guam has very brief overlapping coverage on this rev, we'll stand by through those two.

CAPCOM Apollo 7, Houston, through Mercury, standing by.

SC Hello, Houston, Apollo 7.

CAPCOM Roger, loud and clear.

SC Got any ball score, yet?

CAPCOM Roger, would you believe Kansas beat Oklahoma State 28 to 6.

SC I see.

CAPCOM Oklahoma beat Iowa State 42 to 7.

SC How did Houston and Rice do?

CAPCOM Haven't got - don't have that one yet Donn, we're working on it.

SC I see.

SC Have you got Southern Cal and Ohio State?

CAPCOM Not yet. Got Tennessee 10 Alabama 9. Georgia Tech 21 and Auburn 20.

SC Couple of close ones.

CAPCOM Rog. - 7 be advised that Mercurys doing a good job down there, they're taking rolls up to about 20 degrees and 40 to 50 knot winds, some 15, 16 foot waves and we're still getting good data coming through.

SC Wow, sounds like they're having a high old time, where are they exactly? Is there a big storm in their area, is that whats going on?

CAPCOM Well, the typhoon coming on them from the Phillipines and they're up around Taiwan, somewhere around that area.

SC Oh, yea. They're near Taiwan you say?

CAPCOM Somewhere around in there.

SC Yea. That's kind of a bad place to be with that typhoon going on there.

CAPCOM Yea, that - I think they're going to ride it out.

SC I don't think they have much choice.

CAPCOM That's what they said. - We got word that they're a little green and it's not exactly green with envy.

SC Gosh. - Hey, Ron.

CAPCOM Rog.

SC We, at least Walt and I started drinking out of our little plastic bags, instead of the water gun because it's too hard to work anymore, somethings wrong with the trigger. I've had about 16 to 20 ounces of water (garble).

APOLLO 7 COMMENTARY, 10/19/68, GET: 19942 (CDT 545p) 597/2

CAPCOM  
7, Houston.

SC

CAPCOM  
now or is it still

SC

CAPCOM

7, Houston, through Guam, now. - Apollo

Go.

Rog, did the drink gun stick completely  
just hard to operate.

It works, it's just real hard to operate.

Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GMT 1995200 CDT 5:55p

598/1

CAPCOM

7, Houston LOS. Redstone at 14.

SC

Roger.

PAO

Guam has LOS now. During that pass Donn Eisele advised us that he started drinking water from plastic bag instead of the water gun, the usual mode, because the trigger - there's a problem which makes it hard to operate. Apollo 7 misses Hawaii on this rev, the next station to acquire will be the Redstone. ... This is Mission Control, Houston.

BND OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 2001400 (CDT 6:15p) 599/1

PAO This is Apollo Control at 200 hours, 14 minutes into the mission. The Redstone has acquired Apollo 7. We'll stand by through this pass.

CAPCOM Apollo 7 through Redstone.

SC Roger

CAPCOM Roger, loud and clear, I have a one line flight plan update.

SC Go ahead.

CAPCOM Roger, at 204 plus 20 delete radar transponder self test.

SC Roger, I got it.

CAPCOM Roger. Say, Donn.

SC Go ahead

CAPCOM Rog, at 201 plus 24 you'll be passing right over typhoon Gloria.

SC Okay, I'll try to get a look at it, a picture if possible.

CAPCOM Roger, that's right over the center.

SC Okay, thank you. Ron, could you get me a map update, please?

CAPCOM Wilco. Seven, Houston, are you ready to copy?

SC Yeah, go ahead.

CAPCOM Roger, rev 126 GET 199 plus 21 plus 32, longitude 31.4 East.

SC Okay, thank you.

CAPCOM Roger. Seven, Houston, 30 seconds LOS Ascension at 40.

SC Roger.

PAO This is Apollo Control at 200 hours, 23 minutes. Apollo 7 is beyond the Redstone's range. During this pass CAPCOM, Ron Evans, advised Donn Eisele that at 201 hours, 24 minutes elapsed time Apollo 7 will pass directly over the center of typhoon Gloria. Apollo 7 is about to enter its 127th revolution, and the next station to acquire will be Ascension at 200 hours, 40 minutes. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 20039 (CDT 740p) 600/1

PAO This is Apollo control 200 hours 39 minutes into the mission, Apollo 7 in the night side of its 127 revolution, coming up on Ascension at - upon acquisition at Ascension. Ascension has acquired now, we'll wait for a call.

CAPCOM Apollo 7, Houston, through Ascension and I have some battery ampere hours remaining.

SC You know this bird with all of its windows makes a hell of a planetarium.

CAPCOM You mean, it's kind of hard to see.

SC No, it's very good to see.

CAPCOM Great.

SC Boy, you can really spot them. - Go ahead, Ron.

CAPCOM Roger, Batt A 28.9 B 26.5 C 39.5 Lima-Sierra 073 slant NA.

SC Roger, I understand.

CAPCOM Apollo 7, Houston, opposite OMNI.

SC Roger.

CAPCOM Apollo 7, Houston, about LOS, pick you up at Mercury 18.

SC What?

PAO This is Apollo control 200 hours 50 minutes into the mission Ascension has LOS now after about 11 minutes of acquisition on that pass, a good long pass. Donn Eisele reporting that Apollo 7 makes a good planetarium during the night side of the revolution. Star identification very easy out the window. Next station to acquire will be the tracking ship Mercury over in the storm tossed western Pacific at time 201 hours 18 minutes. This is mission control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 20118 (CDT 0720p) 601/1

PAO This is Apollo control 201 hours 18 minutes into the mission the Mercury is acquiring Apollo 7 now, Guam has overlapping coverage.

SC Roger, Houston.

CAPCOM Roger, Donn, I've got block data, to send up there and work - try to work it in around checking for the typhoon now. So let me know when you want it.

SC Okay, fine, thank, Ron.

PAO Apollo 7, should be over typhoon Gloria, in about 5 minutes, just about the time Guam acquires, we'll continue to stand by.

CAPCOM And 7, Houston, we would like for you to do the CMP power up prior to Redstone and then we'll update your W matrix over Redstone this pass.

SC This pass, okay, will do.

SC I think I've got the storm here.

CAPCOM Good.

SC I'll have to say it really covers a huge area.

CAPCOM Can you kind of determine where the eye is?

SC Well, not exactly, hold it a second, hold on, I think I do have it. - We're going right over the eye, Ron and I'll give you a bark when we're directly over it.

SC Bark.

CAPCOM Roger, 2350.

SC Hey, Ron, are you there?

CAPCOM garble.

SC Okay, it was 54 and 55 of magazine R0, were at typhoon Gloria. I got 35 of the picture of the eye.

CAPCOM Roger.

SC At least that's what it looked like to me.

CAPCOM That's about right on time, that's where they forecasted.

SC (Garble). You could see the long straight through (garble) right into the eye, but there was this little seaport in the middle of it, you could see there were some scattered and broken clouds in it. You could see the water even through it.

CAPCOM Well, I'll be darned.

SC Very interesting.

CAPCOM Yes.

SC How's the Mercury holding up out there.

CAPCOM I'll bet they're still green.

SC Yea, I'll bet they are.

CAPCOM Apollo 7, Houston, opposite OMNI.

APOLLO 7 COMMENTARY, 10/19/68, GET: 20118 (CDT 0720p) 601/2

SC Roger.  
CAPCOM It's a good thing, we don't log those  
transmissions.  
SC What's that.  
CAPCOM Opposite OMNI type.  
SC Yea.  
CAPCOM Apollo 7, Houston 30 seconds LOS  
Redstone at 49.  
SC garble.  
CAPCOM Roger.  
PAO Apollo control at 201 hours 30 minutes  
Guam has LOS Apollo 7 passing directly over typhoon Gloria.  
Donn Eisele photographing the storm, reported a clear spot  
in the eye through which he could see the water. The  
tracking ship Redstone will acquire next at 201 hours 49  
minutes. This is mission control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET 2014900 CDT 7:50p

602/1

PAO This is Apollo Control, 201 hours  
49 minutes into the mission. Apollo 7 coming within  
range of the Redstone tracking ship.

CAPCOM Apollo 7, Houston through Redstone.  
Apollo 7, Houston.

RED This is the Redstone Comm Tech over.  
That's affirmative the spacecraft acknowledged your last  
transmission over.

CAPCOM Apollo 7, Houston, trying again.  
RED Houston, Comm Tech Redstone, spacecraft  
request you say again, over. This is Redstone Comm tech  
spacecraft request you say again over.

CAPCOM Apollo 7, Houston, how do you read?  
RED This is the Redstone Comm Tech space-  
craft read you 5 by over. Loud and clear, over.

CAPCOM Roger, Donn. You're not getting back  
to us the Redstone M & O is relaying. If you want me to  
read the block data up then you can read it back over  
Ascension?

RED This is Redstone Comm Tech, The spacecraft  
acknowledges your last transmission, over.  
CAPCOM Redstone M & O does he want me to  
read the data?

RED Try again, Redstone here.  
CAPCOM Redstone M & O, Houston CAPCOM does  
Apollo 7 want me to read the data to him?

RED This is the Redstone Comm Tech, go.  
The spacecraft is reading you loud and clear, over.  
CAPCOM Apollo 7, Houston. Transmitting in the  
blind I'll give your block data for area 129. The rest over  
Ascension. 129 dash alpha charlie plus 080 minus 0250  
203 plus 23 plus 55 5190.

RED Redstone LOS, Redstone reacquiring.  
Redstone LOS Redstone reacquired. Redstone LOS. Redstone  
LOS Redstone reacquire. Redstone LOS.

CAPCOM Apollo 7, Houston in the blind. We will  
send your W matrix over Ascension. Keep the CMC powered  
up.

RED Redstone LOS. Redstone  
PAO This is Apollo Control at 201 hours  
57 minutes. Communications problems here at the Redstone.  
We can apparently get to Apollo 7, but we do not read  
transmissions from the spacecraft, although the Redstone  
does. We'll try again at Ascension that pass coming up  
at 202 hours 15 minutes. This is mission control, Houston.'

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 2021500 (CDT 8:15p) 603/1

PAO This is Apollo Control at 202 hours  
15 minutes into the mission. Apollo 7 coming withing range  
of Ascension now. We'll stand by.

CAPCOM Apollo 7, Houston, through Ascension.  
SC Roger  
CAPCOM Roger, loud and clear this time Donn.  
and I have the block when your ready.  
SC Okay, Ron go ahead.  
CAPCOM Roger. Are you in accept? then we  
will send the W matrix update.  
SC Okay, I'm ready.  
SC I got your 129 update.  
CAPCOM Okay. I'll start with area 130 dash  
2 alpha plus 192 minus 0270 204 plus 58 plus 45 4399. Apollo 7,  
Houston, switch omni.  
SC Okay, go ahead.  
CAPCOM Roger. 131 dash 2 charlie plus 271  
minus 0271 206 plus 35 plus 31 3774 132 dash 1 charlie  
plus 237 minus 0620 208 plus 02 plus 22 4055 133 dash 1  
alpha plus 294 minus 0600 209 plus 40 plus 53 33 67 134  
dash 1 alpha plus 299 minus 0600 211 plus 20 plus 43 2938  
over.  
SC Roger. 129 dash alpha charlie plus  
080 minus 0250 032355 5190 120 dash 2 alpha plus 192 minus  
0270 2045845 4399. 131 dash 2 charlie plus 271 minus 0271  
206 35 31 3774 132 dash 1 charlie plus 237 minus 0620 208  
02 22 4055 133 dash 1 alpha plus 294 minus 0600 209 40 53 33 67  
134 dash 1 alpha 299 minus 0600 211 20 43 2938.  
CAPCOM Apollo 7, Houston. You're reading  
that correct. Apollo 7, Houston. Our update is complete  
you can power down.  
SC Okay, I'll put it back to bed.  
CAPCOM Roger. Got some football scores here if you  
want.  
SC Oh, okay, go ahead.  
CAPCOM Roger. Air Force over Colorado State  
31 to nothing.  
SC Wow, They're coming up in the world.  
CAPCOM Rog., Navy over Pittsburg 17 to 16.  
SC Navy over who?  
CAPCOM Pittsburg  
SC Oh, that's very good.  
CAPCOM California over UCLA 39 to 15. Purdue  
at Purdue, eeked out one 28 to 27 over Wake Forest. Michigan  
27 Indiana 19. Minnesota beat Michigan State 14 to 13  
Norte Dame 58 Illinois 8 Still don't have any Texas games  
yet.  
SC Ron, what did you say that California  
UCLA score was?

APOLLO 7 COMMENTARY, 10/19/68, GET: 2021500 CDT 8:15p 603/2

CAPCOM 39 California 15 UCLA.  
SC How about Ohio State. Do you have them  
there?

CAPCOM Say again Donn. Opposite omni.  
SC Roger, Ohio State

CAPCOM Roger, Ohio State 45 Northwestern 21.  
SC Roger.

CAPCOM 7 Houston, 1 minute LOS. Mercury at  
54.

SC What's our waste?

CAPCOM We show your waste quantity 84. You can  
dump your at convenience or wait till the other guys get up.

SC Okay, I'll get on it in a little while.

PAO Apollo Control at 202 hours and 26 minutes  
Ascension has LOS. During this pass, we passed up contingen-  
cy reentry information through rev 134. We also up linked  
some navigational information to the command module computer.  
Then Donn Eisele powered down that computer again. The next  
station to acquire again is the tracking ship Mercury.  
202 hours 54 minutes. This is Mission Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 20254 (CDT 855p) 604/1

PAO This is Apollo control at 202 hours 54 minutes, and the Mercury is acquiring Apollo 7.

PAO This is Apollo control, very noisy circuits to the Mercury. This time we may wait until we get Guam acquisition at 203 hours about 3 and a half 4 minutes from now before we put in a call. We'll come back up at Guam.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 2030000 (CDT 9:00p) 605/1

PAO This is Apollo Control at 203 hours. We're at Guam now, and we'll monitor through this pass. Hopefully it will be not quite so noisy.

CAPCOM Apollo 7, Houston through Guam. Apollo 7, Houston through Guam.

SC Roger, Houston.

CAPCOM Roger, loud and clear. Donn, I've got a flight plan update when your ready to copy.

SC Okay, go ahead.

CAPCOM Roger, normal flight plan through SPS burn number 6. GETI about 210 plus 08. At 207 plus 20 fuel cell oxygen purge. At 211 plus 40 MCC update P22 horizon sightings. 212 plus 05 as scheduled. 213 plus 00 to 217 plus 30 delete all scheduled activity. 213 plus 00 add MCC update, state vector, nav check. P22 land mark data. 213 plus 10 TV turn on, 213 plus 12 to 213 plus 23 TV pass. Still with me Donn.

SC Still with you.

CAPCOM 213 plus 40 P22 horizon sightings.

SC Yeh, Ron, I don't understand that, wasn't it really P22 horizon sightings.

CAPCOM Roger, what we're trying to do is get a hack on the difference between the real horizon and one what you think the horizon is. And we'll pass up some more data on that later.

SC Say this is a new one on me, I don't know anything about this.

CAPCOM That's affirm. We'll - I've got some information to pass up to you.

SC Okay.

CAPCOM Okay, at 214 plus 10 P52 IMU realign option 3. At 214 plus 45 start P22 land mark tracking pass. At 215 plus 30 MCC update, P22 land mark data. At 216 plus 00 MCC update state vector if required. At 216 plus 15 start P22 land mark tracking pass. At 217 plus 15 power down.

PAO This is Apollo Control 203 hours and 6 minutes. Guam has LOS. The Redstone will acquire at 203 hours 25 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET:2032500 (CDT 9:25p) 606/1

PAO This is Apollo Control at 203 hours, 25 minutes. Apollo 7 coming up on the Redstone now down in the South Pacific. We'll stand by for this pass.

CAPCOM Apollo 7, Houston, standing by.

SC Roger, Houston

CAPCOM Roger, loud and clear, Donn. Did you copy everything on that?

SC Wait just a second. Affirmative, I'm going to check the waste water in a minute or two.

CAPCOM Roger.

SC Very good pressure. Going by the flight plan fuel cells two thirds and 2720, is that what you gave me? 2720 is that right?

CAPCOM Yes

SC Coming up on burn at 21008, I have at 21140 P22 horizon sightings, is that right?

CAPCOM Yes, I'll update you. The information at that time is an MCC update at that time.

SC Okay, got the information, we're set. got 213 on the hour, we got state vector, NAV check and P22, is that correct?

CAPCOM Affirm.

SC We have a TV pass starting at 12 noon on the 24th, is that it?

CAPCOM Roger, 323

SC Okay, turn the TV on in ten minutes, anyway and play me a tune.

CAPCOM Roger.

SC We got P22 horizon check, whatever that is, at 213:40?

CAPCOM Roger

SC nineteen twenty two opposite and 21410 start of P22 land mark tracking and about 21425, I guess that is, anyway the data matches. Be informed P22 data at 21530.

CAPCOM Roger

SC An update state vector of 216 (static) P22 again at 21650.

CAPCOM Roger

SC And power down at 21750.

CAPCOM Roger. And if you notice, this goes into your sleep period so recommend that you change your sleep periods and move it back two hours, everybody back two hours.

SC Stand by, I've got to shut the water off.

CAPCOM Roger, we show 24 percent now.

SC You show 24?

CAPCOM Oops, we just lost data again.

SC Okay, I'm reading about 15 in here, now

APOLLO 7 COMMENTARY, 10/19/68, GET:2032500 (CDT 9:25p) 606/2

I'm going to shut it off.

CAPCOM

Roger, we concur.

SC

Still got that big water bubble around

the fitting.

CAPCOM

Great

SC

Sure is funny looking, its almost as big around as a silver dollar, hanging on the wall by the fitting on the water dump.

CAPCOM

Well, I'll be darn. Is the leak between hose and the fitting or between the fitting and the panel? Donn, does it leak between the fitting and the hose or between the fitting and the panel?

SC

Its between the fitting and the panel.

The water service panel.

CAPCOM

Roger.

SC

Leaks are on that P-nut, that you tighten

down on to get the fitting on.

CAPCOM

Roger

SC

It doesn't hurt anything, its just a big blob and stays there until you kinda wipe it up.

CAPCOM

Seven, Houston.

SC

Right.

CAPCOM

Rog, got that. On this passive thermo control test tomorrow we want to use the same procedures that you have on board except we want to pitch instead of roll.

SC

Okay, this is on the 212, is that it?

CAPCOM

Say that again.

SC

This is on the strength of 212 hours?

CAPCOM

That's affirmative.

SC

Okay.

CAPCOM

Your procedure is written up to roll but we want the pitch about the Y-AXIS.

SC

Okay, seems to me your looking for a,

pitch instead of a roll, is that right?

CAPCOM

That's affirmative.

SC

You want the same rate 310.

CAPCOM

Affirmative

SC

Okay

CAPCOM

Hello, Seven, Houston, one minute LOS.

I have some good news for you at Canaries 57.

SC

What did you say again?

CAPCOM

Roger, at Canary 57.

PAO

Apollo Control at 203 hours, 35 minutes LOS at the Redstone. Apollo 7 about to enter its 129 revolution. Too far North for the Ascension station at this time so the next station to acquire will be Canary Island at 203 hours, 57 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 20357 (CDT 1000p) 607/1

CAPCOM Apollo 7, Houston, through Canarys. -  
Apollo 7, Houston.

SC Roger, this is Apollo 7.  
CAPCOM Roger, loud and clear, Donn. - When  
Wally and Walt wake up have them remove their biomed  
harnesses and stow carefully for postflight malfunction  
analysis. Over.

SC Okay.  
CAPCOM 7, Houston, one minute LOS Redstone at  
01.

SC Roger, I understand.  
PAO This is Apollo control, 204 hours 04  
minutes, LOS at Canary, Apollo 7 will be out of touch now  
for about an hour. It missed the Mercury and Guam stations  
on this the 129 revolution, next station to acquire will be  
the tracking ship Redstone at 205 hours 1 minute, this is  
mission control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 2050000 (CDT 11:00p) 608/1

PAO This is Apollo Control at 205 hours 1 minute into the mission. At the present time the spacecraft is approaching the tracking ship Redstone in the South Pacific. And here in the Mission Control center we are in the process of changing shift. Flight director Jerry Griffin will be coming on shortly to replace Gene Kranz, and Bill Pogue will be taking over as Cap Com. One piece of logistics information, we anticipate that the Change of Shift Press Briefing will occur in about 15 minutes in the Building One News Center. We'll stand by now for the call to the crew through the Redstone.

CAP COM Apollo 7, Houston through Redstone.

SC Apollo 7.

CAP COM Roger, loud and clear.

SC Roger.

CAP COM Apollo 7, Houston. I have the procedures for your P-22 horizon sighting if you'd like a copy.

SC Roger, stand by.

CAP COM Roger, select P-22, use unknown landmark option. Do steps one, to six. Go to optics mode manual and proceed to step nine. Disregard R-1, R-2 and R-3. Make five marks at least 10 seconds apart and then exit the program at step 12. We will give you the gimbal angles for starting with zero optics if you so desire. Apollo 7, Houston opposite omni.

SC Alright. Let's see, I just select P-22 use unknown landmark ... program to step six and optics manual, proceed to step nine, ignore the display, make five marks 10 seconds apart then exit at step 12.

CAP COM That's affirmative.

SC Okay, I don't think we need gimbal angles for zero optics. We want to use just the sextant or the telescope, I guess the sextant they'd prefer, huh?

CAP COM They'd prefer the sextant and use the upper horizon, or what you think is the upper horizon anyhow.

SC (garble) whatever that is.

CAP COM Rog.

SC Okay, we'll try it. (garble) daylight early.

CAP COM That's affirmative. In the daylight.

SC Okay. I don't think we'll need any gimbal angles. Just set up for small (garble)

CAP COM Okay. And, ah, if it's going good and you can get it at different shaft and trunion angles, the more data we get the better off we'll be, but don't waste any more fuel on it.

APOLLO 7 COMMENTARY, 10/19/68, GET: 20500 (CDT 11:00p) 608/2

SC Okay, what's the purpose of this anyway.  
I guess I don't understand what and why we're doing it?  
CAP COM Okay, the purpose is for ... to get an  
idea on the difference between the apparent horizon and the  
real Earth horizon for the calculations on some mid-course  
corrections.

SC Yeah, I understand that but I don't  
understand what use it is because mid-course navigation is  
done several thousand miles out from the Earth and at that  
point, this horizon jazz doesn't mean anything, hell its  
all going to be --

CAP COM Ah, I see what your saying but --  
SC ... the only place this program applies  
anyway.

CAP COM Roger, we see what you're saying but we  
still don't have a hack on what this difference is, we don't  
have any hack on what the difference is so we'd like to get  
at least one data point on that.

SC Yeah, okay, we can go ahead and do it.  
CAP COM 7, Houston.

SC Go.  
CAP COM Roger. Antigua acquisition at 21 and  
we'd like to have you be in P-5 at that time to send a load  
to you.

SC Okay, I'm going to power up before then  
and try to do a P-51.

CAP COM Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET: 20510 (CDT 1110p) 609/1

CAPCOM

SC

PAO

Apollo 7, Houston, any minute LOS.

Roger.

This is Apollo control, we've had loss of signal now with the spacecraft through the Redstone. During that pass Apollo 7 was approaching apogee in the spacecraft and the present time at an altitude of about 236 nautical miles our apogee is about 237, we'll be passing through apogee in just a very short while. The next station to acquire will be the station at Antigua, we'll pick up there in about 10 minutes, this is Apollo control at 205 hours 13 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/19/68, GET:20521 (CDT 11:25P) 610/1

PAO This is Apollo Control at 205 hours  
21 minutes. We're standing by now to acquire the space-  
craft at the Antigua station.  
CAPCOM Apollo 7, Houston through Antigua.  
CAPCOM Apollo 7, Houston through Antigua.  
SC Roger, Houston, Apollo 7.  
CAPCOM Roger. We monitor too. If you go to  
accept, we have a couple of loads for you.  
SC Roger.  
CAPCOM And I have the maneuver pad when you're  
ready to copy.  
SC Okay, stand by.  
SC Go ahead with your up pad data.  
CAPCOM Roger. SPS number 6, minimum impulse  
21008 0000 minus 00000 plus 00154 minus 00000, 2362 plus  
09002, 00055, 24814 minus 073 minus 128, 00034, 0422, 124  
209, 20, 0000 minus 2214, plus 10262 1511. Last block, roll,  
pitch and yaw, all balls. And we have about 1 minute to LOS.  
I'll wait for Canary for the readback.  
SC Okay. What are you going to do about  
this (garble) key? Is it registering or are you still doing  
it?  
CAPCOM Do we have a verb 33 in the DSKY, Donn?  
SC Okay. After we enter it, we can go up?  
CAPCOM Yes, punch and enter and go on.  
SC Affirmative.  
CAPCOM And, Donn, LOS is so near, we'll get the  
readback at Canary.  
SC Okay, it's all entered.  
CAPCOM Thank you.  
PAO This is Apollo Control. The spacecraft  
now out of range of the tracking station at Antigua. During  
that pass, we handed some information up to Donn Eisele for  
tomorrow's scheduled SPS burn, the 6th burn of the service  
propulsion system engine, scheduled to come at 210 hours  
8 minutes. The next station to acquire Apollo 7 will be the  
Canary Islands and we will pick up there in about 4 minutes.  
This is Apollo Control at 205 hours 29 minutes into the  
mission.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2061400 (CDT 12:17a) 611/1

PAO This is Apollo Control at 206 hours 14 minutes. At the present time Apollo 7 is just crossing over the northeastern coast of Australia. We are preparing to acquire the spacecraft in a few minutes at Honeysuckle. During the Change of Shift Briefing, we had some conversation with Donn Eisele over the Canary Island site and on out over Madrid and we'll play that back for you now and then pick up with the conversation through Honeysuckle.

CAP COM Apollo 7, Houston through Canary.  
Apollo 7, Houston through Canary.

SC Roger, this is Apollo 7.

CAP COM Rog, I have one comment for the maneuver pad for a readback and that is that maneuver is Heads Up, Out of Plane South.

SC Roger.

CAP COM And standing by for readback.

SC Stand by. Houston, Apollo 7.

CAP COM Rog, go Donn.

SC Roger, may I read this back now?

CAP COM Okay.

SC Okay SPS six ... 210 08 00 00 minus 4 balls plus 00 154 minus 4 balls 6362 0902 3 balls 55 24184 minus 073 minus 128 000 34 0422 124 I guess that's 12.4 degrees ... angle.

CAP COM Affirmative.

SC 209 00 0000 minus 2214 plus 102 62 151 and all zeros for attitude this will be heads up out of Plane (garble)

CAP COM Heads up out of Plane south and I'm sure you have it right but the altitude in noun 43 is 151.1.

SC Oh, Roger. I thought I read that.

CAP COM Readback is correct.

SC Okeydoke.

CAP COM Apollo 7, Houston, opposite omni please.

SC Roger.

CAP COM Apollo 7, Houston. Coming up one minute LOS Canary, we'll have another minute and one-half with Madrid if you want to turn your S-band volume up at 40 + 30. Also would like for you to go to block on your uplink.

SC Roger ...

CAP COM Apollo 7, Houston. One minute LOS Madrid, Honeysuckle at 17.

SC Roger, Houston.

CAP COM Apollo 7, Houston, we will need S-band volume up for Honeysuckle.

SC Roger I'll get it up for Honeysuckle too.

PAO That completes the playback for the tape from the pass over Canary Islands. We'll stand by now for

PAO the spacecraft to be acquired through  
Honeysuckle. Apollo 7. Apollo 7, Houston through  
CAP COM  
Honeysuckle. Roger, Houston. Apollo 7.  
SC Rog.  
CAP COM Houston, Apollo 7.  
SC Go.  
CAP COM Say again.  
SC Apollo 7, Houston.  
CAP COM Roger.  
SC Oh, I'm sorry Donn. I thought you  
CAP COM were calling me.  
SC Yeah, I was. I was just answering.  
CAP COM Apollo 7, Houston one minute 30 seconds  
LOS Honeysuckle. One thing that I didn't pass up on the  
maneuver pad they wanted mentioned was that it will be a  
quad B & D LH for burn six.  
SC Roger, that's what I figured on using,  
Bill.  
CAP COM That's what I told them.  
SC Okay, thank you.  
CAP COM Apollo 7, Houston, coming up on LOS,  
Redstone at 36.  
SC Roger, Bill, see 'ya at 36.  
CAP COM Rog.  
PAO And we have loss of signal now from the  
spacecraft through Honeysuckle. During that pass we advised  
Donn Eisele to use quads B and D for the ullage maneuver  
preceeding the upcoming burn this morning. Since coming on  
shift here in Mission Control Center, flight director Jerry  
Griffin has been going through the status of all systems for  
that burn and at this point, everything looks good. The  
burn is scheduled to take place at 210 hours 08 minutes  
elapsed time and will be another minimum impulse burn the  
second such burn performed by the spacecraft service propul-  
sion system engine. That would be a burn of about one-half  
second duration and would impart a change in velocity adding  
velocity to the spacecraft on the order of about 15.4 feet-  
per-second. The next station to acquire the spacecraft will  
be the tracking ship Redstone and we'll pick up there in  
about 5 minutes from now. At 206 hours 25 minutes, this is  
Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2063600 (CDT 12:39a) 612/1

PAO This is Mission Control Houston at 206 hours 36 minutes into the flight of Apollo 7. The spacecraft is presently in its 130th revolution, we're coming up on apogee at this time presently at a height of about 226 nautical miles and we're standing by to put in a call to the spacecraft through Redstone.

CAP COM Apollo 7, Houston through Redstone.

SC Roger, Houston, Apollo 7.

CAP COM Rog, Ron has been working on this P-22 procedure and he has a few more notes he'd like to give you.

SC Oh, okay, just a second I'll get my pen out. Go ahead.

CAP COM Okay Donn, before you select P-22 on the thing, preset your shaft to approximately zero degrees and the trunion to approximately 10 degrees.

SC What for?

CAP COM Rog. What we want to do is use the landmark line of sight in the sextant there, so when you're making the mark -

SC Wait a minute. Wait a minute now, Ron. You mean you want me to use the landmark line of sight and you want me to fly the spacecraft and look at the horizon?

CAP COM That's affirmative.

SC I don't think that makes much sense frankly. For one thing we're going to be pitched way up if we do that which means we're going to be fighting this perigee ... very likely. The other thing is it takes fuel to do that, you've got to keep maneuvering around to get it on there ... line of sight around with the spacecraft rather than maneuvering the optics with the optics controls. Can't they get the same -- P-22 measures optics angles as well as minute gimble angles, that's what it's for. I don't see why we can't use the - if we're going to use P-22, why we don't use the sextant line of sight rather than the landmark line of sight.

CAP COM Ah -

SC We use ... line of sight we can hold local horizontal attitude with it pitched up 15 degrees or so it will work out fine but if you go pitch up 50 degrees to put that line of sight on it that's going to be a horse of a different color.

CAP COM Okay, I understand your concern, Donn, but what we want to do is get a hack when looking through this landmark line of sight at the horizon. It looks different than it does through the star line of sight on the sextant.

SC Oh, I see. Okay, alright we'll give it a whirl.

CAP COM Roger.  
SC That things a little more than "gee whiz"  
data anyway cause that horizon doesn't look anything like  
that when you're 10 000 miles away.  
CAP COM Apollo 7, Houston.  
SC Roger.  
CAP COM Roger, to add a little food to what I  
said before on why we want it, ah, in this mission at a  
close distance if we can get a better feel for what this  
Delta H of the horizon is, ah, we get a better feel closer  
than we would at say 10 000 miles out.  
SC Roger. I can tell you what it is. Its  
2.8 degrees. We measured it.  
CAP COM Okay.  
SC No, we did. We made it in the COAS, we  
made it in the telescope, Wally's measured it in Mercury  
and Gemini flights and its well 2.8 plus or minus a double  
... depending upon where the Sun is and the lighting condi-  
tions and maybe even what your looking at with, I don't  
know.  
CAP COM Roger, I think the only difference we  
might have in there is we're looking at it through the  
difromatic filter on that landmark line of sight now.  
SC Yeah, that could change it a little, I  
don't know, make it look orange.  
CAP COM Rog. (pause) Ah, 7, Houston, what you  
last said there is the object of the whole thing really.  
We just want to get an idea what it looks like, what you  
think the top of the horizon is through that orange looking  
filter.  
SC Well, we did that the other day, you  
know. That's why I gave up on making those ... there just  
wasn't anything there that you could say was a firm line to  
make a mark on. It was all fuzzy in the morphus and like  
that.  
CAP COM We see what you're saying really. Ah,  
Donn, new subject. My errand was completed this afternoon.  
SC Roger, thank you.  
CAP COM Roger.  
SC What kind of response did you get?  
CAP COM The right kind. The good kind.  
SC Very good.  
CAP COM And, we'll see 'ya tomorrow evening.  
SC Okay, Ron, goodnight.  
CAP COM Roger. Apollo 7, Houston. Opposite  
omni.  
SC Roger.  
CAP COM Apollo 7, Houston. Switch omni again

APOLLO 7 COMMENTARY, 10/20/68, GET: 2063600 (CDT 12:39a) 612/3

CAP COM please.  
SC Roger.  
CAP COM Apollo 7, Houston, one minute LOS Red-  
stone, Antigua at 55. Apollo 7, Houston coming up on LOS  
Redstone, Antigua at 55.  
SC Roger.  
PAO This is Mission Control. The spacecraft  
now going out of range of the tracking ship Redstone. We'll  
have acquisition again over Antigua in about 9 minutes. At  
206 hours 47 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 20655, (CDT 12:59A) 613/1

PAO This is Apollo Control at 206 hours  
55 minutes. The spacecraft is just beginning its 131st  
revolution now and we've just acquired through Antigua.  
We'll stand by for CAPCOM Bill Pogue to put in the call.

CAPCOM Apollo 7, Houston through Antigua.  
Standing by.

CAPCOM Apollo 7, Houston. Coming on Antigua  
LOS in about 1 minute. At Canary at 07.

SC Roger, Bill.

CAPCOM Donn, I have one question. Do you have  
the number 1 set of BMAGS powered?

SC That is negative. I do not.

CAPCOM Thank you.

SC Bill, I've got about half the (garble)  
system powered up here.

CAPCOM Thank you.

PAO This is Mission Control at 207 hours  
6 minutes and we have lost contact with the spacecraft  
through Antigua. We'll be reacquiring in about 2 minutes  
from the station at Canary Islands. The sleep periods for  
Wally Schirra and Walt Cunningham are scheduled to have  
ended by now. We should be hearing from them shortly and  
the spacecraft crew will also be involved during the period  
of time coming up now. We're aligning the platform on the  
guidance and navigation system, getting prepared for that  
service propulsion system burn, scheduled for 210 hours  
8 minutes into the mission. We'll be prepared to pick up  
in about 1 minute from now as we acquire at Canary Islands.  
This is Apollo Control at 207 hours 7 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 20709 (CDT: 1:14) 614/1

SC Roger, Bill, Good morning.  
CAPCOM Good morning, how are you today?  
Just wanted to reconfirm that you understand that the LMP  
and the CDR may remove biomed harness.  
SC Rog. We've got that word.  
CAPCOM Okay, thank you.  
SC Do you mean we can remove them right now?  
CAPCOM Affirmative.  
SC I see, okay.  
SC Aren't you all very clever.  
CAPCOM Thought you'd like that.  
SC Do. It doesn't bother us much  
one way or the other but the real point is that I think  
somebody needs to be told the fact that they're not very  
good equipment.  
CAPCOM Apollo 7, Houston about -

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 20715, (CDT 1:20) 615/1

CAPCOM Apollo 7, Houston about 1 minute from  
LOS Canary. S-Band volume up at 16 or approximately 2 more  
minutes of S-Band.

SC Roger, Bill

CAPCOM And we'd like to confirm that you have  
a - have an update for fuel cell 02 Purge at 207 + 20.

SC ... we've got there on the flight plan.

CAPCOM Thank you.

CAPCOM Apollo 7, Houston. 1 minute LOS Madrid,  
Carnarvon at 43.

PAO This is Apollo Control we've now had  
loss of signal from Canarys. We'll pick up the spacecraft  
again in about 25 minutes over Carnarvon, Australia. This  
is Apollo Control at 207 hours 18 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2074300 (CDT 1:46a) 616/1

PAO This is Apollo Control at 207 hours 43 minutes and we're standing by at the present time to acquire the spacecraft over Carnarvon, Australia. Coming up on the midway point in the 131st revolution, we'll listen for Cap Com Bill Pogue to put in a call to the crew.

CAP COM Apollo 7, Houston through Carnarvon standing by. Apollo 7, Houston, opposite omni please.

SC Roger, Bill.

CAP COM Thank you.

SC Houston, Apollo 7. Give me a chart update please.

CAP COM Rog. Stand by. Apollo 7, Houston. Chart update, rev 132, 209 + 53 + 55, 130.3 West.

SC Roger.

CAP COM Apollo 7, Houston, one minute LOS Carnarvon, S-band up for Honeysuckle at 52.

SC Roger.

PAO This is Mission Control. We show that the spacecraft has now gone out of range of the Carnarvon station, however, we will be acquiring again within a matter of seconds at Honeysuckle. We show now that we do have acquisition at Honeysuckle and we'll continue to monitor.

CAP COM Apollo 7, Houston, we still have about three minutes to go. Sounded like we're coming into a keyhole. Redstone at 13.

SC Roger, Bill.

CAP COM Apollo 7, Houston. Opposite omni please.

PAO It appears that's all the conversation we'll have with the crew over Australia this revolution. We'll be in touch next through the tracking ship Redstone and in about 28 minutes, we'll have our first acquisition of the day through the site at Corpus Christi, Texas. This is Apollo Control at 208 hours into the mission.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 208:13 (CDT 2:16A) 617/1

PAO                    This is Apollo Control, Houston, at 208 hours 13 minutes. At the present time, the spacecraft is approaching the tracking ship Redstone. This will be a relatively low-angle pass. The spacecraft is about 5 degrees off the horizon and at this time, the crew aboard Apollo 7 is involved in getting set up for that sixth service propulsion system burn scheduled in a little less than 2 hours. We now have acquisition of the spacecraft and we'll stand by for CAPCOM Bill Pogue to put in a call to Wally Schirra and the crew.

SC                    (Garble)  
CAPCOM                Go. Apollo 7, Houston. Go. Apollo 7, Houston. I read you. Go.  
SC                    Roger.  
SC                    Houston, Apollo 7.  
CAPCOM                Apollo 7, Houston. Go.  
SC                    Roger. You're getting the readouts off our DSKY down there, aren't you?  
CAPCOM                Affirmative.  
SC                    Okay, thank you. I knew it, Bill, I had 34 balls, and now I've got 34 balls 1 here.  
CAPCOM                I've been watching that. They've been looking good.

CAPCOM                Apollo 7, Houston. One minute LOS Redstone. Texas at 28.  
PAO                    This is Mission Control. We've now had loss of signal from the Redstone and we'll pick up the spacecraft in about 7 minutes from the outside at Corpus Christi, Texas. This is Apollo Control, 208 hours 21 minutes

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 20828 (CDT 2:30 a) 618/1

PAO This is Apollo Control at 208 hours  
28 minutes and we have acquired the spacecraft for the first  
time today from our site at Corpus Christi, Texas, and we'll  
pick that one up for you at the beginning.

CAPCOM Apollo 7, Houston through Texas.  
SC Good morning, Texas.  
CAPCOM Good morning. And I have an update for  
the second passive thermal control test.  
SC Go ahead.  
CAPCOM  
SC Rog. Go ahead, Bill. What do you have  
on the passive thermal control?  
CAPCOM Right. I have the update for times and  
attitude.  
SC Go ahead.  
CAPCOM Right. T 0212 plus 05, T align 212 plus  
31, attitude is roll zero, pitch zero, yaw zero. I also have  
some changes to the procedure.  
SC Rog. Did you give a T zero first?  
CAPCOM T zero 212 plus zero 5.  
SC Zero 212 plus zero 5, 212 plus 31, roll  
zero, pitch zero, yaw zero. You want to change your proce-  
dure?  
CAPCOM Right. At T plus 5, make it read set up  
pitch rate, et cetera.  
SC I bet you read a point 3.  
CAPCOM Right. And then just below LBR, where  
it says P and Y attitude hold, make that read R and Y attitude  
hold.  
SC Roll and yaw attitude hold, pitch atti-  
tude reads point 3 for second - right?  
CAPCOM Right. At T plus 26, confirm right -  
that's correct, pitch rate point 3 degrees per second,  
et cetera. And make it disable R and Y, roll and yaw.  
SC Okay.  
CAPCOM And the second line from the bottom there,  
from Y-axis orientation, et cetera. And just as a reminder,  
don't key in the T-align time until within 90 minutes of  
start test.  
CAPCOM Apollo 7, Houston. You're GO for 150  
dash 1.  
SC Roger, thank you. That's the next to last  
one, isn't it?  
CAPCOM Just about. And I passed up - I said don't  
key in T-align time til within 90 minutes of start test. That  
was wrong. It should have been don't key in T-align time til  
within 90 minutes of T-align time.

APOLLO 7 COMMENTARY, 10/20/68, GET: 20828 (CDT 2:30A) 618/2

SC Roger. That's the way I took it.  
CAPCOM Okay.  
CAPCOM Apollo 7, Houston. One minute LOS  
Bermuda. Canary at 44.  
SC Rog, Bill.  
PAO This is Apollo Control. We've had loss  
of signal now from the tracking station at Bermuda. We'll  
pick up the spacecraft again in about 4 minutes as it  
swings on out over the Canary Islands site. During that  
stateside pass, we passed up to the crew a GO for rev  
150 dash 1, a GO for another in orbit. We also gave them  
an update for their second passive thermal control test,  
scheduled to take place in a little over 3 hours, at which  
time they will put the spacecraft into a very slow forward  
pitching maneuver so that it will be tumbling end over end  
once about every 20 minutes. The test total - last a total  
of about 26 minutes. At 208 hours 42 minutes, this is  
Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2084200 (CDT 3:46a) 619/1

PAO This is Apollo Control. We are about to reacquire the spacecraft now at the Canary Island site at 208 hours 44 minutes. We'll stand by for Cap Com Bill Pogue to put in a call to the crew.

CAP COM Apollo 7, Houston through Canary, standing by.

SC Roger. Ah, Bill would you look up the man hours that was flown on Gemini 7.

CAP COM Stand by.

SC We passed Gemini V on time we're wanting to pass Gemini VII on man hours.

CAP COM Oh, I see what - okay. (pause) Apollo 7, Houston.

SC Go ahead, Bill.

CAP COM Right. Gemini VII 661.2 hours, you are coming up on 627 in about 13 minutes.

SC Roger.

CAP COM Also, we would like the SPS line heaters to A, we have an engine valve temp around 50 degrees we'd like to warm that up a little bit and you can turn that back off whenever the inlet temperature reaches 75 degrees or in any event turn it off before the burn.

SC Okay, I have a SPS propellant tank temperature there which is not a very apt description maybe of the ... Should I turn it off when my measurement shows 75?

CAP COM That is affirmative. But stand by for a check on that.

SC Okay, I'm turning the heaters on now.

CAP COM Right. (pause) Apollo 7, Houston, that is affirmative. When the propellant tank temperature reaches 75 degrees. (pause) Apollo 7, Houston, one minute LOS Canary, Carnarvon at 18.

SC Roger. We got a real thrill, we saw a ... oh about 100 miles long right over the Canary Islands. We didn't get a chance to get a picture though.

CAP COM Rog. Contrail.

SC Roger, it was really a long one. We just don't have that kind of film anymore.

CAP COM Right, too bad.

PAO This is Apollo Control. The spacecraft has now gone out of range of the Canary station. We'll acquire again at Carnarvon, Australia. During that pass you heard Wally Schirra request the total man hours in orbit for the longest U.S. space flight to date, the Gemini VII mission and that figured out to about 661.2 hours. We advised the spacecraft that they will shortly have 627 man hours. In rough figures that means they have about 10 hours

APOLLO 7 COMMENTARY, 10/20/68, GET: 2084200 (CDT 3:46a) 619/2

PAO to go before they equal and surpass the Gemini VII for man hours in space, on a single mission. Wally also mention sighting a very long contrail, we assume from a jet aircraft flying below them over the Canary Islands. He estimated that it was about 100 miles and was a very spectacular sight. This is Apollo Control at 208 hours 53 minutes into the mission.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET:20918 (CDT 3:21) 620/1

PAO This is Apollo Control at 209 hours 18 minutes. The spacecraft presently coming up on the Carnarvon, Australia, tracking station and we'll be acquiring shortly. Coming up at the end of this burn, rather at the end of this revolution and the beginning of the next one, we will have the minimum impulse burn, the sixth maneuver with the service propulsion system engine. That burn will be on the order of one-half second duration for the purpose of determining just how closely the guidance and navigation system can control a very short duration burn. And CAPCOM Bill Pogue has just put in a call to the crew over Carnarvon.

CAPCOM Apollo 7, Houston. On the time hack on 209 plus 19 coming up in 5 seconds. Mark 209 plus 19.

SC Do it again.

CAPCOM Rog, I'll give you a mark on 209 plus 20.

SC Rog. . . . (unreadable)

CAPCOM I'm having difficulty copying, Wally. 10, 5, 4, 3, 2, 1, Mark. 20 -

SC . . . (unreadable)

CAPCOM Right, thank you.

SC I was with you. That's pretty tight, isn't it? My remark was you should have played with those Mercury range clocks if you want fun.

CAPCOM Right.

SC Hello down there, Carnarvon. You look good today.

CAPCOM Apollo 7, Houston. One minute LOS Carnarvon. Standing by 1 minute for Honeysuckle.

SC Roger.

PAO This is Apollo Control. We've had a loss of signal now from the Carnarvon station and we'll continue to stand by for reacquisition of the spacecraft momentarily over the station at Honeysuckle.

CAPCOM Apollo 7, Houston. One minute LOS Honeysuckle. Guaymas at 58.

SC Roger.

PAO This is Apollo Control. Very little conversation on that pass over Australia as the crew appears to be actively involved in getting ready for the upcoming SPS burn. Now that burn, by the way, is scheduled to occur over the eastern Gulf of Mexico at just the time we hand over communications from Corpus Christi to the station at MILA. Burn time, again, is 210 hours 8 minutes elapsed time. At 209 hours 37 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2101300 (CDT 4:01a) 621/1

PAO This is Apollo Control at 209 hours 59 minutes. Apollo 7 is now crossing the Eastern Pacific coming up on the coast of Mexico. As we approach the stateside pass that will see the sixth burn of the 20 000 pound thrust service propulsion system engine. As the spacecraft went out of sight from the Honeysuckle, Australia station, we got a report that they were in burn attitude, rolled heads down and the nose of the spacecraft at right angles to the flight path. We'll pick up the conversation now from the station at Guaymas.

SC 30 second check list.

CAP COM Rog, thank you.

SC ... anything ... accomplished ... wire heaters on board, I'm reading exactly ... temperature on mine.

CAP COM Yes, we did show an increase at Carnarvon on your valve temp.

SC Okay. (garbled) may not be able ... verify how much water we burned yesterday on the secondary coolant loop test.

CAP COM Okay. We're checking on it. (pause) Apollo 7, Houston, are you trying to call.

SC Negative.

CAP COM Rog. (pause) Apollo 7, Houston. Confirm omni A.

SC That's affirmative.

CAP COM Thank you.

SC Looks like another one might be better.

RCS circuit breakers closed.

... water control ... closed.

Direct RCS OFF

Direct RCS OFF

One roll channel in able

One roll channel in B&D in able

BMAGS are 82

BMAGS are 82

Spacecraft control CMC AUTO

CMC AUTO

SCS TV both ... command

Break command

TVC Gimbal drive pitch and yaw AUTO

AUTC

TVC Servo power one and two ON

One and two ON

Hand controller power to one

Hand controller power to one

Hand controller two ON, stand by for

main buss time

APOLLO 7 COMMENTARY, 10/20/68, GET: 2101300 (CDT 4:01a) 621/2

SC Check  
PAO Less than five minutes now from the burn  
the crew going through a final check list.  
SC Gimbal motor pitch one yaw one  
Pitch one - start  
On  
Gimbal one - start  
On  
Translation ... clockwise  
Clockwise  
Verify no MTVC  
No MTVC  
Pitch two Yaw two  
Pitch two - start  
On  
Yaw two - start  
On  
Confirm ... trim  
KPI set  
Verify MTVC  
Roger MTVC verified  
Translation hand controller neutral  
Neutral  
Hand controller power to both  
Both  
... trim over  
Roger  
Direct RCS ON - Direct RCS ON  
Roger, direct RCS is ON  
... attitude rate command  
Rate command  
BMAG att 1 rate 2  
Att 1 rate 2  
Standing by for two minutes.  
Roger.  
Check maneuvers - GO.  
... need another GDC align  
If we do, now is the time to do it.  
Two minutes.  
Two minutes.  
FDAI scale five five  
Five and five  
L&V thrust A&B normal  
... normal  
Hand controllers armed  
Hand controllers armed  
Standing by for 30 seconds.  
Roger.  
PAO Coming up on one minute to the burn and  
all displays on flight director Jerry Griffin's console

APOLLO 7 COMMENTARY, 10/20/68, GET: 2101300 (CDT 4:01a) 621/3

PAO continue to show green.  
SC Okay EMS to Delta V in AUTO  
Delta V on 30 seconds  
2 jet ullage in 20 seconds  
Roger  
20 seconds  
Jet ullage now  
CAP COM Ten (pause) five, four, three, two, one,  
ignition.  
SC Complete  
Roger, bring complete Delta V thrust  
A & B OFF, spacecraft control SCS, do you read those ...  
CAP COM Rog, I have them.  
SC Roger.  
Circuit breakers ... control ... open  
... circuit breakers open  
... power one and two OFF  
Direct RCS OFF  
Direct RCS OFF  
Main buss ties are already OFF  
EMS mode - OFF standby reading residuals  
Roger, I got minus 12.8 on L&D counter.  
... no chance to read it now.  
CAP COM Ah, Donn, what'd you have to start with?  
What did you have set in?  
SC 5.5 '  
CAP COM Thank you.  
SC That's almost a space first. We did it  
without hearing you "Cats".  
Can we go back to bed, now?  
Hope you all weren't scared down there?  
CAP COM We were watching.  
SC Don't you feel like your kinda left out?  
CAP COM We saw it all.  
SC Settin' okay.  
PAO And, we've been advised here in the  
Control Center that that burn apparently had a duration of  
.4 of a second 1/10th of a second below the nominal 5/10ths  
and very good.  
CAP COM Apollo 7, Houston.  
SC Go ahead, Bill, roger.  
CAP COM I have a block data pad here, back to  
the mundane things, when you're ready to copy.  
SC Ready to copy.  
CAP COM Rog, block data 135 dash 1 alpha +266  
-0630 213 00 32 2817, 136 dash 4 alpha +279 -1618 215 38 45  
3689, 137 dash 4 bravo +302 -1620 217 17 27 3168, 138 dash  
4 alpha +280 -1617 218 57 54 2840, 139 dash 4 bravo +217

APOLLO 7 COMMENTARY, 10/20/68, GET: 2101300 (CDT 4:01a) 621/4

CAP COM -1640 220 39 03 2969, 140 dash alpha  
Charlie -250 -0050 221

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21013 (CDT 4:17a) 622/1

CAPCOM 221 1 niner 06, 73 niner 2. Standing  
by for readback.

SC Readback follows: 135 dash 1 alpha plus  
266 minus 0630, 213 plus 00 plus 32, 2817 136 pdash 4 alpha  
plus 279 minus 1618 215 plus 38 plus 453689 137 dash 4 baker  
plus 302 minus 1620, 217 plus 17 plus 27, 3168 138 dash 4  
alpha plus 280 minus 161.7, 28 plus 57 plus 54, 2840, 139  
dash 4 baker plus 217 minus 1640, 220 plus 39 plus 03, 2969  
140 dash alpha charlie minus 250 minus 0050, 221 plus 19 plus  
06, 7392. Over.

CAPCOM Readback is correct.

CAPCOM Apollo 7, Houston. One minute to los  
Bermuda, Canary at one niner.

PAO This is Apollo Control. That minimum  
impulse SPS burn appeared to be right on the money. We were  
targeted for a maximum of about five tenths of a second and  
we came up a little better than that at about four tenths of  
a second. We're standing by for a readout on the Delta V  
imported to the orbit, the change in velocity and the amount  
of propellant consumed in that very short burn. We would  
anticipate that the change in velocity would be something on  
the order of 15 feet per second. We don't anticipate that it  
would have much affect on the orbit. We will be re-acquiring  
the spacecraft shortly from the station at Canary Island.  
At the present time we have gone out of range from the  
Bermuda station. This is Apollo Control at 210 hours, 19  
minutes.

END OF TAPE

PAO This is Apollo Control. We've just put in a call to the spacecraft through Canaries. We'll pick up that conversation.

SC What happened to your com? We missed your 2-minute and 1-minute check.

CAPCOM Well, I gave you a 2 minute and I waited and didn't say anything at 1 minute. We said we were going to stay a bit more quiet on this burn for you.

SC That's okay. I don't think we read your 2 minute. Of course, we may have overridden you cause you were broadcasting. There was some background noise activity just about that time that was very strong.

CAPCOM Yeah, it must have been us. I've also been having some trouble keying.

SC Yeah, Donn should have his key on. It was open on the key. That's why I'm trying to bring the point up for you. That will give the Com Tech something to do.

CAPCOM Rog.

SC Bill, do you have apogee and perigee for us after -

CAPCOM Stand by. We're doing some tracking right now. We'll give you the results shortly.

SC Okay. Bill, this is Wally.

CAPCOM Go.

SC Roger. Someone is keying on us.

CAPCOM Say someone is keying on you.

SC That's right. Very slowly. I'd like to give you a statement for the day.

CAPCOM Right.

SC We are going to acquire a static fire on the SPS engine for 101.

CAPCOM Right. Copied.

SC At this time.

CAPCOM You're right.

SC I might add that I'm also glad to be in the position of having the ability to avoid saying I told you so on this one.

CAPCOM Amen to that. And have your orbit now. 90.3 by 236.2.

SC Roger. 216.2, huh?

SC That was 236.2?

CAPCOM Affirmative. 236.2.

SC Okay. Our first cut onboard, just to compare the two was 2347 and 882.

CAPCOM Rog. 2347 and 882.

APOLLO 7 COMMENTARY, 10/20/68, GET 21020 (CDT 4:23A) 623/2

SC Right. Guess we'll have to compare the  
two as best we can.  
CAPCOM Rog.  
SC Houston, Apollo 7.  
CAPCOM Apollo 7, Houston. Go.  
SC Rog. We had the TV camera off that  
time, not running. And it came out of the bracket.  
CAPCOM Rog. Understand.  
SC In my lap. Didn't hurt anything, just  
got caught on my leg.  
CAPCOM And you did have it in the bracket?  
SC That's right.  
SC The tunnel hatch bracket.  
CAPCOM Right.  
SC The other thing that I don't think we've  
ever even thought of is that all of our burns have been  
conducted with the couch in the dock position and no  
problem.  
CAPCOM Understand.  
SC We'll meet the retro burn with the couch  
in the boost position.  
CAPCOM Roger.  
CAPCOM Apollo 7, Houston. One minute LOS  
Canary. Tananarive at 40.  
SC Roger.  
PAO This is Apollo Control. We've had loss  
of signal now from the station at Canaries. We'll acquire  
next over Tananarive. During that pass, you heard Wally  
Schirra comment that the TV camera apparently came off its  
bracket and into his lap during the SPS burn. He reported  
that there was no damage done and seemed to indicate satis-  
faction with the performance again of the SPS engine in  
that sixth burn. We now have two more burns scheduled, one  
of those being the burn to take the spacecraft out of orbit  
early Tuesday morning. At 210 hours, 28 minutes into the  
flight, this is Apollo Control.

END OF TAPE

( .POLLO 7 COMMENTARY, 10/20/68, GET: 21041 (CDT 4:44) 624/1

PAO This is Apollo Control, Houston at 210 hours, 41 minutes. We're standing by at this time to acquire the spacecraft over Tannanarive off the southeast coast of Africa.

CAPCOM Apollo 7, Houston through Tannanarive.  
- Apollo 7, Houston, one minute LOS Tannanarive, Carnarvon at 54.

PAO This is Mission Control. We've had loss of signal now from Tannanarive, no conversations with the crew on that pass. This is Apollo Control at 210 hours 46 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21054 (CDT 4:58) 625/1

PAO This is Apollo Control at 210 hours 54 minutes. We have some updated figures for that previous SPS burn, burn number 6, the minimum impulse. Subsequent telemetry shows that the total time of the burn including tailoff was five-tenths of a second and we calculate a Delta-V change of velocity of 18.6 feet per second. Now we've just put in a call to the crew now over the Carnarvon, Australia, tracking station. We'll listen in.

CAPCOM . . . and, Walt, I have the water consumption during the secondary loop test yesterday as being approximately 5 to 8 pounds. Some uncertainty because there wasn't an eat period at that time.

SC Because there wasn't what period?

CAPCOM An eat period.

SC An eat period, okay. You can tell them that they can count on whatever reconstitutionals were in that meal, we used the water that went with them.

CAPCOM Rog.

SC They still want the eight clicks from the water gun?

CAPCOM Rog.

SC Might make a note that I consistently reported that the water gun's trigger action is becoming very very stiff and we're taking some of our drinking water and putting it in an empty bag out of the spout down there and the cold water spout is getting a little stiff, too. The hot water spout is still working nice and smooth.

CAPCOM Rog. Understand. Copied.

CAPCOM Apollo 7, Houston. One minute LOS Carnarvon, S-band volume up in 1 minute for Honeysuckle.

PAO This is Apollo Control. We've now lost our communications with the spacecraft over Carnarvon. We'll be reacquiring at Honeysuckle shortly. We'll stand by and we'll come back up with any conversations that develop over eastern Australia. This is Apollo Control, at 211 hours 4 minutes into the flight.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2112700 (CDT 5:30a) 626/1

PAO This is Apollo Control at 211 hours  
28 minutes. We've just acquired the spacecraft now from  
the tracking ship Huntsville. We'll stand by for the call.  
CAP COM Through Huntsville.  
SC ...  
CAP COM And we'd like the O2 tank two fans ON  
three minutes and then OFF.  
SC ...  
HTV Houston, Huntsville cannot log, downlink  
too low.  
CAP COM Apollo 7, Houston. Would you say again  
last.  
SC (garbled) (pause) Hey, Bill, we've  
got the ... OFF and are leaving them off now.  
CAP COM Okay, roger.  
HTV Huntsville LOS.  
CAP COM Apollo 7, Houston. How do you read?  
SC Loud and clear.  
CAP COM Roger, I was having difficulty reading  
you at Huntsville. I read you to say line heaters were OFF  
and that you were leaving them OFF. Was that correct?  
SC No, the line heaters are off, we're  
leaving them off and we also turned the fans off - the O2  
tank two.  
CAP COM Rog. Did you cycle them?  
SC Sure did.  
CAP COM Rog, thank you. (pause) Apollo 7,  
Houston.  
SC Go ahead.  
CAP COM I have some information here on landmark  
tracking that might be helpful. If you desire to get your  
landmark maps in order, the following landmarks will be on  
track for the first landmark exercise. I'll stand by until  
you're ready to copy.  
SC Okay, Bill. Roger, you just going to  
read off the numbers right?  
CAP COM Affirmative.  
SC Okay, go ahead with the numbers.  
CAP COM 20, 48, 71, 225. That's it. Note:  
we will have landmark update for you at 212 + 30. An  
additional note for clarification. Also, landmark 48 is on  
the page for landmark 40 in your map set.  
SC Okay, thank you.  
CAP COM Rog.  
SC You got any idea of the weather along  
these marks, Bill? Are they all clear?  
CAP COM Stand by. That's a good question.  
(pause) Apollo 7, Houston. I have the weather on those

APOLLO 7 COMMENTARY, 10/20/68, GET: 2113700 (CDT 5:30a) 626/2

CAP COM landmarks.  
SC Go ahead, Bill.  
CAP COM Roger. For landmark 20 the coverage is  
4/10ths, for landmark 48 coverage is 2/10ths, 71 - 3/10ths,  
225 is 1/10th.  
SC Roger read you.  
SC Houston, Apollo 7.  
CAPCOM Apollo 7, Houston.  
SC Don't you think that you have got me set  
up for the maximum purging torque I can get.  
CAPCOM Standby.  
SC We'll go ahead and - I think we've got  
plenty of fuel, no problems.  
CAPCOM Okay, we'll check.  
SC I'm going to try to give this thing the  
most torque I could in purging, as to the way I'm flying.  
That's BEF about 60 degrees off.  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Roger, this is the same thing that we  
had last night. Donn questioned us on it and it was a good one  
then and is now and the answer is that we realize what you're  
saying is true, but in order to get the test performed above  
200 miles, we have to start it low like this.  
SC Roger. It's amazing that the (garble)  
of people can figure it out up here and those computers can't.  
(garble).  
CAPCOM Okay.  
SC If you get a chance, get some more data  
on this purging torque.  
CAPCOM Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21149 (CDT 5:52) 627/1

PAO This is Apollo Control at 211 hours  
51 minutes. It doesn't appear as if we'll have any additional  
communication with the spacecraft until we re-acquire at  
Canary Island is about 5 minutes.  
END OF TAPE

PAO This is Mission Control, Houston at 211 hours 56 minutes. Spacecraft approaching the Canary Island site now - we'll be acquiring shortly there. At the present time the orbital weight of the combined command and service module is at 24,736 pounds. That following the sixth SPS burn this morning. The orbit is 236.1 by 90.1 and we have an orbital period of 90 minutes 35 seconds. We've just acquired spacecraft at Canaries. We'll stand by for the call.

CAPCOM Apollo 7, Houston through Canary.

SC Roger.

CAPCOM Say, Donn I have a little tweek on that P22 horizon and sighting procedure.

SC Okay, go ahead.

CAPCOM Roger. We want to get TM and during this procedure and the procedure has been modified as follows:  
 1. Do the test over ascension on the next pass. That will be at approximately 213 + 37 and wait for call from ground before starting. We want TM lockup for data and this is a low elevation pass. 2. and this is a change from the previous procedure - go through P22 twice making two marks approximately five seconds between marks. Before going through P22 the second time wait for a GO from the ground. Again we want to insure that we have a TM lockup.

SC Roger. that was 213 + 37.

CAPCOM Affirmative.

SC Do you want me to wait for you to confirm it or you want to lockup, is that correct?

CAPCOM Affirmative.

SC (garbled) and you want the marks five seconds apart.

CAPCOM Two marks. That's right. But we only need two marks each time.

SC Oh, just two marks, right?

CAPCOM Affirmative.

PAO This is Apollo Control, we've had LOS now following that relatively quiet pass over the Canary Islands. We'll acquire the spacecraft again over Tananarive and that will be in about 12 or 13 minutes from now. This is Apollo Control at 212 hours 2 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET:21214 (CDT 6:17A) 629/1

PAO This is Apollo Control at 212 hours  
14 minutes. We're standing by now to acquire the space-  
craft through Tananarive.

CAPCOM Apollo 7, Houston through Tananarive.

CAPCOM Apollo 7, Houston, one minute LOS  
Tananarive. Carnarvon at 29.

PAO We've had loss of signal with the  
spacecraft through Tananarive on another very quiet pass.  
Now this is a relatively quiet period in the flight plan  
for the Apollo 7 crew. We do have a passive thermal control  
test in progress, at the present time. That is scheduled to  
last a total of about 45 minutes, and it involves the -  
requires the crew to impart a very slow tumbling momentum  
to the spacecraft at a rate of about three-tenths of a  
degree per second, which would figure out to about one  
revolution or one complete tumble every 20 minutes. During  
this period of time, be observing the thermal condition of  
the spacecraft and how it behaves thermally when in a, not  
a controlled, but a drifting flight mode. We'll be acquir-  
ing at Carnarvon in about 6 or 7 minutes from now. This is  
Apollo Control at 212 hours 24 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21231 (CDT 06:33a) 630/1

PAO This is Apollo Control at 212 hours 30 minutes. We are in touch with the spacecraft over Carnarvon. We will tune in on that conversation now.

CAPCOM Apollo 7, Houston through Carnarvon.

SC Roger. I wish you would find out the idiot's name who thought up this test. I want to find out and I want to talk to him personally when I get back down.

CAPCOM Roger, Wally. Good morning.

SC Good morning. Where is Jack? They told me I was out about 20 pounds of fuel to get this attitude right now.

CAPCOM Roger -

SC While you are at it, find out who dreamed up D22 horizon test, that is a beauty also.

CAPCOM Okay, Donn.

SC I understand the objectives and I understand the reason, but I just don't understand all the changes and so forth at the last minute. I think it's rather ill prepared and hastily conceived.

CAPCOM Roger.

SC I'm sitting just watching roll beat back and forth + 2/10th of a degree per second. I have got to go better than that.

SC Jack, I need one question answered on this landmark jazz, too. I guess the idea is to put the sixth landmark on the horizon. Now what do you want me to do with the movable line of sight, I mean the sixth line of sight on the right. With the movable on, do you release the zero optics or do you want me to run it off, so we are looking only through the sixth - sixth line of sight with a filter in it?

CAPCOM Okay, Donn, I will get you an answer.

SC Okay.

SC Hell no, we are real happy this morning.

CAPCOM Navy won and so did Ohio State.

SC How did Stanford do, by the way?

CAPCOM Just a minute, I'll get it for you.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Roger.

SC Go ahead, Jack.

CAPCOM Okay. In answer to Donn's question on the landmark line of sight, put the landmark line of sight on the horizon. You can move the star line of sight away from the horizon to get rid of the earth's albedo affect.

SC Okay, I see.

CAPCOM And Wally, you - the answer to your question, Stanford and Washington played to a 21-21 tie.

SC Very good, or very bad, just depending.

SC Thank you.  
 CAPCOM Roger.  
 SC We have a feeling you are believing that some of these experimenters are holier than God down there. We are a heck of a lot closer to him right now.  
 CAPCOM Roger. (chuckle)  
 SC Then we just (garble) spend 26 minutes getting to a very precise attitude, then high pick and right through perigee.  
 CAPCOM Roger, copy, Wally.  
 SC Also, started just about 10 days ago, right up to it. Can't even get a roll to get it down.  
 CAPCOM Could we have opposite omni, 7.  
 SC Roger.  
 CAPCOM Apollo 7, Houston.  
 SC Go.  
 CAPCOM Okay. We are close to losing you here at Carnarvon. We do have Honeysuckle. Do you want to turn your S-band up? Over Hawaii, we are going to send you a state vector update and I've got the lunar - I mean this landmark tracking pass for you.

SC Okay  
 PAO This is Mission Control Houston. The spacecraft now going out of range of the station at Carnarvon. We will be reacquiring shortly at Honeysuckle. Here at the Mission Control Center, we are presently undergoing a change of shift, with Glynn Lunney's black team coming on to replace the gold team headed by flight director Jerry Griffin. During the previous shift, we gave the spacecraft a go for - through revs 150 and that will be another day in flight, at least. That came on the 131st revolution at 208 hours into the flight. At 210 hours 08 minutes, we carried out the sixth service propulsion system burn, right on schedule. That burn was as planned, with a duration of about 1/2 second and imparted a delta velocity, a change in velocity, to the spacecraft of about 18.6 feet per second. The present orbit is 90.3 nautical miles at the low point, and we have an apogee of 236.2. During the previous shift, we also began the second passive thermal control test, putting the spacecraft in a slow end-over-end roll, or rather, tumble and observed the thermal control - the effects on the thermal condition of the spacecraft during this control tumbling action. The television pass for the morning is scheduled to come up at the end of this revolution, ground elapsed time of 213 hours 12 minutes, or about 7:14 am Houston time. The Space Flight Meteorology Group, our weather bureau, reports that weather conditions for the flight of Apollo 7 during the next 24 hours will be satisfactory. This is Apollo Control at 212 hours 41 minutes.

CAPCOM Houston, Apollo 7.  
 CAPCOM Go ahead, Donn. Apollo 7, Houston.  
 SC Houston, Apollo 7.  
 CAPCOM Apollo 7, Houston.  
 SC Roger. You want to give me those updates  
 now, Jack?  
 CAPCOM Okay, Donn, I can do it.  
 SC Fire away.  
 CAPCOM There are three landmarks. Number 1 is  
 48. It's North of ground track 49 miles. The time 214  
 plus 55, GET, 327, trunnion 033. And the second one, Donn,  
 is 71. It's 4 miles South of ground track. 214 plus 59,  
 shaft 002 and a trunnion 030. We're giving you these two  
 and we're just going to let you choose which one of the two  
 that you think you would rather do. The weather is about  
 the same in both of these. You can choose either one of  
 those and the second landmark is number 225. It's 44 miles  
 North of ground track, DT is 215 plus 21, shaft 340,  
 the trunnion 030.  
 SC What happened to landmark 20?  
 CAPCOM Okay, Donn. That's so close to the  
 other two that we thought we'd rather not do it. I can give  
 you the data. It's only 4 minutes before landmark 48 so we  
 kind of thought that was too close for you.  
 SC Well, give me the data anyway.  
 CAPCOM Okay. Landmark 20 is 51 miles North of  
 ground track. It's T 14 plus 51 on the GET, shaft 329,  
 trunnion 032.  
 SC Now give me landmark 225 North or South?  
 CAPCOM Landmark 225 is 44 miles North of  
 ground track.  
 SC Okay.  
 CAPCOM And, Donn, landmark 20 is about four-  
 tenths covered. That's about the worst of all of them.  
 SC Okay.  
 SC I wonder if he said due North? We  
 should be doing 48 by now.  
 CAPCOM Say again, Donn.  
 SC I said Donn should know where 20 is,  
 at least.  
 CAPCOM . . . (unreadable). We're about 2  
 minutes LOS Honeysuckle. We'll pick you up in Hawaii at  
 56.  
 SC Okay.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21257 (CDT 7:00A) 632/1

PAO This is Apollo Control Houston at 212 hours 57 minutes into the flight. We have some tape through Hawaii, which just acquired, and we'll start that tape and catch up with the conversation.

CAPCOM Apollo 7 Houston through Hawaii.

SC I finished the so-called pitch pony test, and I think you might take note of the fuel we have left after that caper. I wish you would log that.

CAPCOM Okay, Wally, I'm going to be coming back with you. It's a real good hack on your fuel usage. We've really been watching that closely.

SC We've got the fuel to burn, but that's a hell of a way to burn it up.

CAPCOM I agree.

CAPCOM Okay, Wally, right now we show that you've used 13 pounds in the PTC test, which is right on what we expected, and -

SC I'd like to cut that to about 4 pounds (garbled)

CAPCOM Could you go to PU and ACCEPT and we'll send up this state vector.

SC Go ahead Jack.

CAPCOM Okay. 214 plus 20 plus all balls minus 0921 plus 14534 2341.

SC Could you read it to me again, please?

CAPCOM Roger. 214 plus 20 plus all balls minus 0921 plus 14534 2341.

SC (garbled) would you give it to me one more time?

CAPCOM Okay. 214 plus 20 plus all balls minus 0921 plus 14534 2341.

SC Roger. 214 20 0000 minus 0921 plus 14534 2341.

CAPCOM You got it.

SC Hey Jack, what day what meal are we supposed to be eating around noon?

CAPCOM You want to know what your eat period is?

SC No, what meal I'm supposed to eat next.

CAPCOM Okay, stand by.

SC I think we've got a minor crisis.

CAPCOM Roger.

CAPCOM Apollo 7, the computer is yours.

SC Go on the NAV check.

CAPCOM Okay, copy that.

SC We have a feeling that the dietician somewhere on a 10.8 day flight which means like 11 working days. The flight plan, however, has 12 working days. It looks like we're one day short on chow.

CAPCOM Okay, Wally, we're just coming up - we're

APOLLO 7 COMMENTARY, 10/20/68, GET: 21257 (CDT 7:00A) 632/2

CAPCOM 3 hours short of starting a 10th day,  
so this would be meal C on the 9th day, or meal A on the  
10th day.

SC Roger, it's meal B. Like anybody else  
we eat three meals a working day.

CAPCOM Roger.

CAPCOM Go ahead Apollo 7.

pao Apollo Control here 213 hours and 10 minutes  
into the flight and Guaymas is acquiring, on which we just might  
see some television here in a moment.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21310 (CDT 7:13a) 633/1

PAO The Flight Director reminds us all that we are about to get acquisition with Texas, according to the chart we should acquisition there right now. This pass has been an unusually quiet one since we acquired at Hawaii. The crew yesterday was advised to make this purely an operational test of the television system, that is, to simply turn it on and go about their normal duties as they cross the States. We are seeing a rather foggy picture right now, let's see if we can sharpen it up a little. There, we get a shot of the camera looking up at - .

SC Roger. We have ALC in on that right now.

CAPCOM Okay, looks good.

SC Put out, we have an out. Well one way or the other anyway. (garble) We can change the ALC.

CAPCOM Okay.

PAO The camera is looking up at Donn Eisele there, from the lower equipment bay mounted position.

CAPCOM That looks real fine, it's a real good picture.

PAO Notice Donn Eisele has his suit on, his hoses all hooked up.

PAO That was a big space yawn.

PAO See Walt Cunningham off to the top of the picture there. Donn Eisele takes a look at the flight plan. It's not clear to us how Donn is anchored below there, perhaps he has his feet wedged in somehow under the struts under of - under the seat. The trouble, they say, is not due to your set, the picture has gone bad. Here it is back. The sound of the voice quality, if they are saying anything, - getting some sound now.

SC There's a beautiful sight today, the sun lighting up the whole Gulf of Mexico. (garble) We can really see Lake Okeechobee from here. Houston, Apollo 7.

CAPCOM Roger, go ahead 7.

SC Roger, there's beautiful lighting around here.

CAPCOM It looks like Donn needs a shave.

SC I think we all do.

CAPCOM If anybody is near the camera, they might switch the ALC position.

SC Okay.

PAO ALC means the Automatic Lighting Control. I think, unless they have changed the camera, everybody is going to have a kink in their neck trying to see it.

SC It looks like a beautiful day all the way from - beginning with the Gulf Coast up and around to the tip of Florida.

CAPCOM That's good news.

PAO That weather observation came from

APOLLO 7 COMMENTARY, 10/20/68, GET: 21310 (CDT 7:13a) 633/2

PAO Walt Cunningham. You can observe the dramatic changes in lighting conditions from the start of this pass to this point. That just shows how rapidly the light conditions do change in space. I guess we can't be accused of looking over their shoulder, but we can be accused of looking under their shoulder this morning.

CAPCOM Could we have opposite omni, Apollo 7.

SC Roger. Do you still have the picture.

CAPCOM We've still got it, we've got it for a couple more minutes. Looks like you're doing a little looking for landmarks, Donn.

SC (garble) that's one of the most spectacular sights I've seen just now, all the way across the States. You can see the whole Florida peninsula lit up by the sun rays, this morning of course, all the way from the west coast, all the way across the Gulf Coast.

CAPCOM Copy that.

PAO This has been a long, quiet, strictly business pass this morning. Now we can see Wally Schirra on the lower part of your screen.

SC Hey Jack, on magazine R, frames 58, 59, and 60 were taken looking towards Florida on this pass.

CAPCOM Okay, I log that.

SC The last one is looking down at the Cape. Got a lot of sun coming in the lens, I hope we have some pictures of it.

CAPCOM Yes, we can see it's pretty sunny in there.

PAO That's probably the water gun in Cunningham's hand.

CAPCOM Hey Walt.

SC Yeah.

CAPCOM What's the coil-like wire that's coming right in front of the lens there?

SC See that?

CAPCOM Yes, we can see it.

SC That's the water gun.

CAPCOM That's what we thought.

SC Can you actually see all three of us sitting in here like this?

CAPCOM I can just barely see you, it looks like you're chewing on something, and I can see Donn real good, but I can't see Wally.

SC Donn came up to join us especially for the show.

CAPCOM Okay.

SC He has been down below with the computer.

CAPCOM I can see Wally now. He's just handing - no, that's Donn that has the map.

SC They don't let me up here very often.

APOLLO 7 COMMENTARY, 10/20/68, GET: 21310 (CDT 7:13a) 633/3

SC Only for the show.  
CAPCOM Roger.  
SC Somebody has to pump the pedals down here  
to keep us going.  
CAPCOM Copy that. It looks like we're just about  
to lose the picture.  
SC Did you see the beards we've got up here  
Jack?  
CAPCOM Sure can.  
PAO It looks like we're at the ragged edge  
of acquisition, the picture coming back a little sharp -  
no, it's cloudy, it's snowy. That will probably do it,  
everybody has had their heads cocked at an 80 degree angle. They  
can pull it back up to upright now. Let's standby for any  
additional audio for this pass.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21323 (CDT 7:26A) 634/1

SC Roger, Jack, I hope the (garbled)  
SPS burns and TV shows.  
CAPCOM Copy that, you can go back to work now.  
The TV's off.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21337 (CDT 7:40A) 635/1

PAO Apollo Control here 213 hours 37 minutes.  
We've put the first call in via Ascension and we've not  
gotten an answer, Let's listen.

CAPCOM Apollo 7 Houston through Ascension.  
CAPCOM Apollo 7 Houston through Ascension.  
CAPCOM Apollo 7, Apollo 7, do you read Houston?  
CAPCOM Apollo 7 Houston opposite omni.  
CAPCOM Apollo 7 Houston.

SC Go ahead.

CAPCOM Okay, we've got good solid TM you can  
start P-22.

CAPCOM Apollo 7, How are you doing with marks  
on P-22?

SC We're working on it.

CAPCOM Okay.

CAPCOM We're about 1 minute LOS Ascension.

We get Tananarive at 50.

CAPCOM Donn, if we lose you here we want you  
to continue this thing, recording it in high bit rate and  
then when you've finished the program then go to your up  
telemetry to your command reset back to normal. We'll dump  
it back over the states.

SC Okay, and then you want high bit rate  
if we don't get it real time.

CAPCOM Okay. Just about to lose you.

SC Jack?

CAPCOM Apollo 7 Houston through Tananarive.

CAPCOM Apollo 7 Houston through Tananarive.

standing by.

CAPCOM Tananarive M & O Houston CAPCOM.

TAN Houston CAPCOM, Tananarive.

CAPCOM Roger. Am I going out down there?

TAN Affirmative.

CAPCOM Okay, thank you sir.

TAN You're welcome.

SC Houston, Apollo 7.

TAN Roger.

CAPCOM Apollo 7 Houston.

SC This is Apollo 7. Do you read?

CAPCOM Roger, you're about 2 by, Donn. We're

standing by here.

SC (garbled)

CAPCOM Roger. Donn, could you give me an  
approximate GET. The tape was stopped on that P-22.

SC (garbled) give you the run down. Do

you read me okay?

CAPCOM I'd rather wait till Carnarvon to get  
the rundown so I don't miss anything.

APOLLO 7 COMMENTARY, 10/20/68, GET: 21337 (CDT 7:40A) 635/2

SC                    You won't miss a hell of a lot if you don't get it here. (garbled) We did not get the results that you're after. We didn't get a damn thing in fact. All we got was program alarm and a restart light and a CMC light.

CAPCOM                Roger, I understand and copy you got a program alarm, restart and a CMC light.

SC                    I still (garbled) and it happened when I punched the PROCEED button and stepped into the program, P-20. I think it's a result (garbled) realine lights.

CAPCOM                Okay, Donn, you faded there, I didn't quite get it all.

SC                    We didn't get anything.

SC                    (garbled) over Carnarvon.

CAPCOM                Okay, Donn, copy that you didn't get anything at P-22. We'll be with you over Carnarvon at 05.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21407 (CDT 08:10a) 636/1

PAO This is Apollo Control Houston, 214 hours 07 minutes into the flight. The computer lockup, which you heard discussed over Tananarive, is getting a good working over, in a conversation via Carnarvon. Let's listen.

CAPCOM Apollo 7, Houston through Carnarvon.

SC Carnarvon, Houston, Apollo 7. How do you read me?

CAPCOM I read you 5 by, Donn.

SC Okay, Jack. I don't know if you've got what I said at Ascension or not. Did you read all that?

CAPCOM Negative. You faded out at Ascension and at Tananarive you were just about 2 by, fading in and out also.

SC Okay, I'll start over. We got into proper attitude and I got the horizon in the sextant fixed line of sight. I ran through P22 as per your instructions, up through step 10, I believe, where you proceed, and display and - well, anyway, step 10, when I hit proceed, I got a program alarm and restart light and a CMC light.

CAPCOM Okay, Donn -

SC I tried the (garble) on the verb side to see what the alarm was and the computer wouldn't take it. It was locked up tight. A few minutes later, we decided to try to unlock it, so we did the go-jam procedure. Hit reset, marked reject and reset at the same time, and that unlocked it. I looked at the program alarm and it was 1302, which says that the computer was trying to work with the square root of negative numbers. I think probably, as a result of trying to do marks on the horizon which is a couple thousand miles -

CAPCOM Okay, Donn. I want to ask you on that step 10, when you were setting your option, did you use the unknown or the known -

SC I loaded in known landmarks.

CAPCOM Okay, copy that. That's what we wanted and so we have got something to mull over down here on the ground.

SC You sure do. I want to talk to the man, or whoever it was that thought up that little gem; that one really got to us.

CAPCOM Okay, Donn -

SC Hey, Jack.

CAPCOM Go ahead, Wally.

SC I have had it up here today and from now on, I am going to be an onboard flight director for these updates. We are not going to accept any new games like adding 50 feet to the delta-V quota for a burn, or doing some crazy tests we never heard of before.

CAPCOM Roger -

SC Each test is going to be reviewed thoroughly before we act on it.

APOLLO 7 COMMENTARY, 10/20/68, GET: 21407 (CDT 09:50a) 636/2

CAPCOM Okay. Understand that, Wally.  
SC And I suggest that when something like  
this comes up again, that you take it over to the simulator,  
run it through, if it wrings out, we may try it -  
CAPCOM Copy. Could you give me the approximate  
GET that you want your command reset, Wally?  
SC It was only a few minutes after we left  
you - that's about time, time when you called.  
CAPCOM Okay, copy. Do you think you will be  
able to do the P22 landmark tracking now?  
SC Jack, we went ahead and used your last  
nav check for the update, (garble), so rather than taking  
erasable, we will go ahead and do the landmarks and after  
that we want to check the erasable.  
CAPCOM Okay, copy that. I have a voice P27  
update to give you at this pass over Carnarvon here.  
SC What's behind that one?  
CAPCOM That was part of the flight plan. It is  
just to give you prior to the landmark tracking here, in  
case you need it.  
SC Okay, we buy it.  
CAPCOM Okay, and the other thing is on P22  
landmark tracking area, you going to do it? If you are  
going to maneuver in minimum impulse we are recommending  
AC roll for quad balance. If you are going to use the DAP,  
we would recommend failing quad A and B, this again to  
balance fuel.  
SC Are you saying that B and D are below  
A and C now?  
CAPCOM No. A and C, A and B are the low quads,  
we would like to fail those and just maneuver in quad C and  
D, if you are going to use DAP control for the landmark  
tracking.  
SC We are going to use pulse, DAP is too  
expensive.  
CAPCOM Okay, if you are going to use pulse,  
then in SCS, we would recommend AC roll and BD roll off, and  
the rest of the channels on.  
SC Starting right now.  
CAPCOM Okay.  
SC Ready to copy, Jack, go.  
CAPCOM Okay. Vector verb, state vector verb  
71216 + 14 + 002101605000017541466060 - 30563440106175072  
005015241550702374367703151112441121707040. The nav check  
21544 all balls - 1995 + 101452335. Could you delay the  
readback just a second.  
SC Roger. As follows, verb 71216140021 -  
CAPCOM Delay.  
SC Did you say delay, Jack?

APOLLO 7 COMMENTARY, 10/20/68, GET: 21407 (CDT 08:10a) 636/3

CAPCOM Roger, delay just a second, Wally.  
Okay, Wally.

SC Go ahead.

CAPCOM Okay, because of the CMC light and the go-jam procedure, we have got to go back through and do a P51 and a P52, option 2. The key align time will be 215 + 00 + 00.

SC Roger, (garble) and get it right now.

CAPCOM Okay, and I'm ready on the readback there, Wally.

SC Roger, readback follows. Verb 7121614  
002101605000017541466060 13056344010617507200 -- 5015241550  
702374367703151112141121707040 and our key align time is  
215 + 00 + 00, nav check 21544 4 balls - 1995 + 101452335  
over.

CAPCOM Roger, voice P27 was correct and your key align was correct also.

SC Okay, thank you, Jack.

SC Jack, have you detected our concern, that any time we give that computer the balls out and the restart, it just (garble).

CAPCOM Roger. It has concerned us equally as much, Wally.

SC I know, but we have a bigger problem right now. I hope everybody is learning that you don't make updates like that without a lot of problems. This is not a simple machine, it's very sneaky, it has a lot of steep paths, and I want everything validated before we train any more with it.

CAPCOM Okay, Wally. We want to get a verb 74, we would like to get an E mod dump here before we go over the hill. We are about 1 minute 15 seconds LOS.

SC We've got alignment coming up, sorry about that.

CAPCOM Roger, Wally. We still would like to get that verb 74 and catch the dump before you go over the hill.

SC Okay.

CAPCOM Okay, we are about 40 seconds LOS Car-narvon, we get Guam at 21.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21433 (CDT 8:36A) 637/1

PAO This is Apollo Control 214 hours 33 minutes. And the conversation has been resumed via Hawaii. We've just tagged up, let's tune in. To background you a little here, the crew apparently assumes that some navigational information that was passed up to them, when it was put in the computer apparently caused program alarm. That's at least, we're assuming on the ground that they are making that assumption. We don't know whether it's a valid assumption yet or not, but there is no question about the fact that they are making that assumption. Here is the start of the Hawaii pass.

SC 214 hours and 22 minutes, program 52 opposite 02 started (garbled) angles plus 2-724 plus 2 balls 376 minus 01696. Started the angle at 5 balls.

CAPCOM Okay, copied that, Donn.

SC We were ready for you.

CAPCOM Roger, read that.

CAPCOM Apollo 7 Houston through hawaii.

SC How does our rations look, Jack?

CAPCOM It takes up 15 or 20 minutes, Donn, to have the people look at it in the back room.

SC Okay.

SC That's a lot better than they did when we had to dump it down at the Cape.

CAPCOM You're right.

SC What was that? 3 months?

CAPCOM We'll get you the word to that as soon as we can.

SC Roger. Jack, we'll give that last goop to the lead elbow and pipe set.

CAPCOM Wally, I have the morning news and any footballs scores you're interested in.

SC Roger, go ahead.

CAPCOM Okay, Jackie Kennedy and Aristotle Onassis are to be married today on his island off Greece. They tell me that back here in Houston the city is sinking. The last 65 years that parts of the city have sunk as much as 6 feet. What scores would you like?

SC I've already heard that UCLA lost. How about the University of Houston.

CAPCOM They didn't play.

SC You might run up the score on fuel so far.

CAPCOM Okay, and work.

SC That was a real load up as far as I could tell.

CAPCOM Roger.

CAPCOM Wally, we've got a RCS chart update for you.

SC Go.

APOLLO 7 COMMENTARY, 10/20/68, GET: 21433 (CDT 8:36A) 637/2

CAPCOM Okay, 5 4 3 pounds.  
SC 5 4 3.  
CAPCOM Roger.  
SC Except for the burn, what did we accomplish  
with all that?  
CAPCOM Say again, Wally.  
SC Except for the burn 06 what did we  
accomplish today?  
CAPCOM Well, we're going to get a lot of land  
mark tracking in, and I think that will pretty much accomplish  
what we set out to do.  
SC Yes, we're going to burn on that though.  
I haven't finished flying that part.  
SC If we subtract out the burn there, burn 06,  
I'd say we blew about 25 pounds of normal experiment.  
CAPCOM Roger.  
SC Jack (garbled) do you read?  
CAPCOM Go ahead, Wally.  
SC What's so discouraging is I sit up here  
and we pulse all over the place trying to save a couple of  
pounds of fuel, and some guy comes along and puts it in  
tight, tight, tight dead band right through perigee.  
CAPCOM Roger, understand. We discussed all that  
before we read up the flight plan to you, and we really wanted  
to do it.  
SC I understand that, but why do we have to  
have tight dead band and then turn it off to get a coding  
test? I can do that pulse mode. I don't need to fly this  
spacecraft for 26 minutes in tight dead band and then let  
it drift. In fact, in the middle of pulse I can get enough  
thrusters to pull us through it.  
CAPCOM Roger, I understand.  
SC I wish somebody would make the people  
aware of that.  
CAPCOM Roger, Wally.  
SC In tight dead band it sits here and  
oscillates in roll 01 plus or minus 2/10 of a degree per second.  
In plus I can get about 1/100th of a degree per second.  
CAPCOM Roger.  
SC That's what we are complaining about.  
CAPCOM I understand.  
SC Jack, I would like to have you call Frank  
Borman and inform he better go to his total flight plan from  
liftoff in real time and check his time line out for sleep,  
work cycles, and for food periods.  
CAPCOM Roger, copy.  
SC And not too soon.  
CAPCOM Roger.

APOLLO 7 COMMENTARY, 10/20/68, GET: 21433 (CDT 8:36A) 637/3

SC Jack?  
CAPCOM Go ahead, Walt.  
SC Can you read the DSKY now?  
CAPCOM Negative. we've been handed over to the  
Huntsville. We don't get data there, we'll have to wait till  
California.  
SC Okay, when we clear to California I'll  
show you what zero roll looks like and what zero yaw looks  
like in pulse.  
CAPCOM Roger.  
SC We've really got a lot of graphs going  
today.  
SC (garbled)  
PAO We should pick up the spacecraft at  
California just any second now. We have moved through the  
Huntsville area.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21446 (CDT 8:49a) 638/1

SC Houston, Apollo 7.  
CAPCOM Go ahead 7.  
SC Do you read the DSKY?  
CAPCOM Affirmative.  
SC Note roll and yaw. 25 down. I didn't  
take the 26 minutes to get it that tight either.  
PAO The spacecraft is maintaining 0 rolls,  
0 yaw, and is pitched down 25 degrees.  
SC Houston, from up here, we can't see  
Galveston.  
CAPCOM Roger.  
SC You've got some high cirrus that blocks  
it out on top of low altitude.  
CAPCOM Okay, copy.  
SC Jack, I don't know whether to pass this  
down to you or not, but the light, sunlight gives us a hard  
time reading the DSKY and Delta-V counter, and the MET.  
We may need some shade type device up here to permit us to  
read the instruments.  
CAPCOM Okay, I've logged that.  
SC Jack, I forgot twist on that 50 foot  
per second over burn the other day. I'll have to reset the  
GET now to get the MET. I can't read the MET with full bright.  
CAPCOM Okay, I logged that, Wally.  
SC Roger.  
PAO Apollo Control here, 214 hours, 54 min-  
utes and we're about halfway through a long and rather quiet  
stateside pass.  
SC You need the high bit rate or, low bit  
rate.  
SC Frame 59, magazine R, Havana.  
CAPCOM Roger.  
SC Now Jack, you can say today, that we're a  
small moon over Miami.  
CAPCOM Roger. (Chuckle)  
SC Got 5 marks, Jack. on Coral Gables  
CAPCOM Okay, real fine Donn.  
SC Or that key, or whatever it is. Key Biscayne,  
I guess.  
PAO Apollo Control here. Landmark 20, the  
one the crew missed was Galveston Bay area, and you heard  
them note, "high cirrus clouds socked in, couldn't make  
it out." They did pick up at least one, perhaps two landmark  
sights in Florida, around Miami, Coral Gables. We're still  
holding an open line to 7, which now is just south east of  
Florida.  
PAO Meanwhile out in the far west Pacific,  
we've got a second storm southeast of Gloria, which is now  
swirling just within - the eye of which is quite close to  
our ship Mercury. Mercury is taking pretty good waves out

APOLLO 7 COMMENTARY, 10/20/68, GET: 21446 (CDT 8:49a) 638/2

PAO there. Understand in the order of  
15 to 20 foot waves. A second storm, meanwhile is brewing,  
it's due east of Guam, perhaps 500 to 600 miles southeast  
of the present storm Gloria. We have no predictions yet  
on its path, but it boiling into a pretty full size storm.

CAPCOM Apollo 7, Houston.  
SC Go ahead, Jack.  
CAPCOM I have the pad for this landmark -  
second revolution landmark tracking.  
SC Wait one. Jack, the second landmark  
is clobbered with clouds, I can't see it.  
CAPCOM Okay, that's the number 71?  
SC Right.  
CAPCOM Okay, real fine.  
SC Go ahead Jack, ready.  
CAPCOM Okay, the first one is landmark 11, that's  
54 miles north of ground track, 216 plus 23, shaft 325,  
trunion 033. No. 2 - no. 128, that's 1-1/2 miles north of  
ground track, 216 plus 34, shaft 000, trunion 030. Third,  
no. 144 at 16 miles north of ground track, 216 plus 44,  
350 shaft, 030 trunion. No. 4, 227, 45 miles north ground  
track, 216 plus 57 GET, 342 shaft, 029 trunion and that's all.

SC Roger Jack, the last part I didn't get  
the - how far north or south.  
CAPCOM Okay, the last one is 45 miles north of  
ground track.  
SC Okay, I'll give you the landmark number,  
the GET, 227 for that one, 216 plus 57. Going back to the  
beginning with landmark 11, 216 plus 23; landmark 128, 216  
plus 34; landmark 144 at 216 plus 44.  
CAPCOM Roger, you faded on the last one, 216  
plus 44.  
SC Right, on that one, what was the shaft  
angle?  
CAPCOM Okay, shaft was 350.  
SC Thank you.  
CAPCOM Okay, we are about 1 minute LOS Antigua.  
We'll pick you up at Ascension at 10.  
SC Roger, note 60 and 20 again.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21501 (CDT: 9:04a) 639/1

CAPCOM Copy.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21512 (CDT: 9:25a) 640/1

PAO Apollo Control Houston here at 215 hours, 22 minutes. Via Ascension a few minutes ago, we simply had a Hello and a Goodbye. There was no communication beyond establishing circuit. The recovery room advises that the dash 3 area, the far western Pacific area, has been closed and will not be considered for a landing operation through the remainder of the mission. Two destroyers that were operating there yesterday were directed to port early yesterday. They will be told to remain in port because a second typhoon is aborting out there in WESTPAC and there's just no point in trying to get the ships back on station. Meanwhile, the Mercury, which is somewhat to the west of the typhoon Gloria, is still riding around on 15 foot waves and it's captain's option there, but the captain has elected to remain in the area to continue to service the flight. We will contact Apollo 7 at Tananarive at 26 minutes - 215 hours, 26 minutes, about 2 minutes from now. If there is communication, we'll be back to you.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21549 (CDT: 9:52a) 641/1

PAO Apollo Control Houston here. 215 hours, 49 minutes into the flight. About 7 minutes ago we established - we had an establishing call with Apollo 7 via Tananarive and - but no conversation developed and a similar situation has developed here at Carnarvon. We moved through the Carnarvon circle now without any further conversation with the crew. We expect to acquire via Guam in - at 215 hours, 53 minutes, about 3 minutes from now. The crew is being given a 1 minute LOS at Carnarvon. And they acknowledged that LOS. In the - more on the western Pacific weather area, typhoon Gloria's position at 1100 Zulu, it's now 1400 Zulu. That's 3 hours ago. It was estimated at 23 degrees north, 132 degrees east. The Apollo ship Mercury is still on station and doing an excellent job. It's 400 miles west of the storm and it's riding in swells of up to 15 to 18 feet. The ship is taking as much as 20 degrees roll. The targeting points for the WESTPAC, the Western Pacific area, have all been moved east to the Hawaii area, the dash 4 area, for the rest of the mission actually. But they're presently - we have the information on revs 136 through 140, and alternate targeting for those points, for those revs 136 through 140, have been set up for landing areas in the south Atlantic around Ascension Island and a few points north and east of Tananarive, in the south Indian Ocean. The destroyer that had been in the western Pacific area, the Rupertus, and the Tucker, have made port now in Yokosuka, Japan. At 215 hours, 52 minutes into the flight, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21554 (CDT 09:56a) 642/1

PAO Apollo Control here. Jack Swigert is putting a call in and let's pick it up.  
SC (garble)  
CAPCOM Say again, Wally.  
SC Donn and I tried out the oxygen masks, it was a mandatory DTO.  
CAPCOM Roger, copy that.  
SC This is Apollo 7.  
CAPCOM Go ahead, 7.  
SC Roger. We had a program alarm that's anomolied too fast. What we were doing was trying the lights all turned out and see the computer exterior lights and had a GMI power (garble).  
CAPCOM That was when you turned the lights down you got it?  
SC That's firm. Oh no, we are not sure, Jack, I had the (garble) down also. I brought the lights back up again and the program alarm was on.  
CAPCOM Yes, we can read it here, 1105.  
SC Roger, print. We tried to get in a variable in the exterior light and we are trying to see if it came on.  
CAPCOM Okay.  
SC That occurred in 2, by the way.  
CAPCOM Roger.  
CAPCOM Apollo 7, you are about 1 minute LOS Guam, we get Hawaii at 08.  
SC Roger. Who is that superduper (garble)  
CAPCOM That's the number 1 substitute.  
SC (laughter) We are getting along pretty well today.  
CAPCOM Yes, all the systems looking pretty good, Wally.  
SC Going to have to ask you to watch those new flight plan revisions, though.  
SC You been east or north, I mean west or north?  
CAPCOM Say again, you are coming garbled.  
SC Have you been west or north?  
CAPCOM Oh, north.  
SC How are we looking?  
CAPCOM Pretty good.  
SC Good.  
SC (garble)  
CAPCOM We are just about LOS. We will pick you up at Hawaii.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21610 (CDT 10:13A) 643/1

PAO Apollo Control Houston, 216 hours 10 minutes into the flight. Tom Stafford has struck up a conversation with Apollo 7 via Hawaii. Let's listen.

CAPCOM Apollo 7 Houston through Hawaii standing by.

SC When refilling the PLISS tank we took some oxygen out of it.

CAPCOM Roger. Copy that.

SC When we first picked up the bags one of the test buttons was depressed and we turned on the oxygen. We had full flow through it.

CAPCOM Okay, copy that.

SC It was still a mandatory detail.

CAPCOM Did it make much noise, Wally, with that depressed button?

SC Yes, you could hear it very easily, Tom.

CAPCOM Okay.

SC But Donn and I were still grabbing for masks rather fast.

CAPCOM Okay.

CAPCOM Well, Wally, an interesting point for about 4 more hours the total man hours up there will exceed Gemini 7.

SC 4 more, very good.

CAPCOM We don't have all the PM on, but I can imagine DELTA-P lights are all three on.

SC Affirm. Yes, we found out we had 11 days food for 12 days work, but we'll only be short one meal.

CAPCOM Roger.

SC I passed the word down for all command pilots to check their flight plans from liftoff to splash for work rest cycles and for -

CAPCOM Okay.

SC Make it out for 12 working days and about that many days sleep.

CAPCOM Yes, we'll talk to you down at the Cape, too, as soon as you get down there.

SC Hey, Tom, what you might do is take a look at those sleep day awake cycles and pick out the meals you want there, too. Sometimes they try to slip sleep cycle in between meal B and C, for example, and you end up eating dinner for breakfast if you follow this schedule.

CAPCOM Will copy.

CAPCOM Gemini 7 Cape.

SC Go ahead.

APOLLO 7 COMMENTARY, 10/20/68, GET: 21610 (CDT 10:13A) 643/2

CAPCOM Okay, let's try that one more more time.  
Apollo 7 from Houston. Does that sound more up to date?

SC Say again Deke.

CAPCOM Hey, listen, let's go over this reentry  
thing one more time since we've got a little slack here in  
good communications.

SC One of the things I plan on doing after  
we break off the burns today is put on my suit and see how  
we stand in the couch with the helmet off.

CAPCOM Roger.

SC I'd like to get a report on that. That'll  
happen, though, probably an hour and a half or two hours  
from now.

CAPCOM Okay -

SC Go ahead.

CAPCOM Let me tell you what our recommendation  
is and then your office is going to have to play it by the  
best knowledge you've got up there. Okay, we're recommending  
you come in with the torso on obviously for the leg protection  
which we talked about yesterday.

SC Roger.

CAPCOM And secondly, if you can valve salvo with the  
helmet popped loose. Keep the helmet on at least  
down through 50,000. Pop it so you can clear your nose,  
and then have it on for protection on landing. That, of  
course, is optional. The glove situation is the same. I  
don't think it matters whether they're on or off. The backup  
to that would be to come in without helmets or gloves and  
in that case we think you ought to provide yourselves with  
some head protection on the head rest.

SC Roger. Our problem is if we pop the  
helmets off we'll have to have the gloves off to get them  
back on.

CAPCOM That's correct.

SC And for restraint it's very hard to  
maneuver them around, and we're a little worried about  
getting them back on again, particularly if we pick up  
drogues and then the lg environment, and there we've got  
three bomb shells running around the cockpit when we're  
landing.

CAPCOM Yes, I think the glove situation is  
pretty clear cut. I don't think you ought to mess with those.  
I think it may be desirable to have head protection from the  
helmet on landing, however, if we can figure out how to do  
it.

SC Yes. We may just cock it back and get  
to our noses.

CAPCOM That was what we were thinking.

SC But the odds of making up the neck rings

APOLLO 7 COMMENTARY, 10/20/68, GET: 21610 (CDT 10:13A) 643/3

SC again are pretty slim when we are  
restrained.  
CAPCOM I suspect that's true, but I think  
you're probably still better off with the helmet on loose  
than not on at all.  
SC Okay, we'll play the game up here today.  
CAPCOM Okay, fine.  
SC (garbled) at least give us an option on it.  
CAPCOM Roger.  
SC (garbled) I hope somebody meets us with  
a safety razor on that carrier.  
CAPCOM Say again, Walt.  
SC Somebody (garbled) a safety razor on  
that carrier.  
CAPCOM Roger, I think there may be a couple.  
SC Caption: The flight plan is beards  
are NO-GO.  
CAPCOM Got that.  
SC (garbled) that pulse control is beautiful.  
CAPCOM Copy.  
SC Is Tom still there?  
CAPCOM Roger.  
SC Okay, for roll, Tom, with one variant,  
it's 8 pulses for 2/10th of a second.  
CAPCOM Yes.  
SC For pitch and yaw, pitch about 10 pulses  
per 2/10th of a degree per second.  
CAPCOM Okay, got it, and that's using just the  
one ring there, huh? Are you using just -  
SC Just rings in the roll, yes.  
CAPCOM Yes.  
SC The pitch is pure.  
CAPCOM Okay.  
CAPCOM Apollo 7 Houston. Wally, does the sound  
on minimum impulse sound like Gemini with those cracks?  
SC Negative. It sounds like (garbled)  
CAPCOM Yes. Okay.  
SC It's sort of like the Gemini, but  
(garbled)  
CAPCOM Okay.  
SC They are in a different tune, the pitches  
are about one note lower than yaw -

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21610 (CDT: 10:23a) 644/1

CAPCOM Okay.  
SC (garble) but there it is. Very discern-  
able, only one of them.  
CAPCOM Okay.  
SC We had a different trunnion which is about  
1 minute lower than yaw and roll is sort of an individual  
note.  
CAPCOM Okay.  
SC Land ho.  
CAPCOM (chuckle)  
SC Say, Jack, can you give me a map update  
for the closest -  
CAPCOM Okay, stand by. Okay, Walt, I've got it.  
Are you ready to copy?  
SC Go ahead.  
CAPCOM Okay, you're just coming up on rev 137  
here. The time, 217 plus 25 plus 25. The longitude of the  
node, 144.1 degrees east.  
SC Copy.  
SC Our 61 magazine is (garble) and (garble)  
very close behind the (garble) time for this pass.  
CAPCOM Okay.  
SC And not an uninteresting minute out of this  
pass.  
SC Our target is wide open.  
CAPCOM Roger.  
SC Jack, try and watch the P22 because the  
trunnion is strapped to our (garble) and we're tracking on  
our (garble) on the target.  
CAPCOM Okay, we're watching P22.  
SC (garble) roll right about 5 degrees to  
optimize on the target pickup.  
CAPCOM Okay.  
SC Jack, you can see her sitting just about  
at orb rate, pitch down, a little bit to go. Quite a view.  
SC Guaymas, we can see your station.  
SC Guaymas, Apollo 7, (garble) muchos gracias.  
CAPCOM We copied, Wally, but I don't know whether  
Guaymas got it or not.  
SC Roger.  
CAPCOM It sounds Spanish to me.  
SC Si. How's our cut for going over Mexico  
City?  
CAPCOM Stand by one, Wally. Okay, it looks like  
you're going to be coming fairly close to Mexico City.  
SC Yes, it looks like that from the path  
we're going. North or south? Looks like it's going to be

SC north.  
CAPCOM That's what we show.  
SC Roger.  
SC Tom, we're getting a real kick out of this  
left seat. If you can sit here and just scrunch it down like  
a submarine commander working with a periscope, I've got the  
line in right now with the number 1 eight ball and we can  
just cruise back and forth with no strain at all.  
CAPCOM Okay, that's out of the number 1 window  
and the eight ball?  
SC Number 2 window and the number 1 eight  
ball.  
CAPCOM Roger.  
SC We just got down about 2 or 3 feet of  
this last portion. This IVA stuff is just great sport. No  
problem at all. Out in front of the number 1 ball to take  
the rates out.  
CAPCOM Wally, Houston. What about when you're  
in local vertical in the dark position. Can you see the  
horizon pretty well?  
SC Yep.  
CAPCOM Okay, and I asked Donn late the other  
night when you were asleep, to make some marks on this side  
window just with a pencil so we can calibrate the simulator  
later on, you know, for the attitude out the side window.  
SC Oh, you mean for zero pitch?  
CAPCOM Yep.  
SC Tom, I can give you a couple of figures  
on that. If you're head is laying in the center couch at  
zero pitch, the horizon cuts through right about the middle  
of the rear side of the both number - both side windows, num-  
ber 1 and 5.  
CAPCOM Okay, got it. Thank you.  
SC You can't see across the cockpit and see  
the horizon now, that's the center couch.  
CAPCOM Okay.  
SC Don't give up that center window. That's  
a dream if they can get it fixed up right.  
CAPCOM Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21630 (CDT 10:33a) 645/1

CAPCOM Apollo 7, Houston.  
SC Landmark is (garble)  
CAPCOM Okay, copy. Wally, the power-down that was scheduled at 217, we would like to delay that in order to get a state vector update to you probably through Guam about 21730 and then we can power-down after that.  
SC Roger, are you going to check our (garble) or have you found that it is alright.  
CAPCOM Okay, I haven't gotten the report on that yet, but I'm waiting for it and I will get it up to you as soon as I get it.  
SC I'd like to get that before we power-down. I rather not screw it up again tomorrow.  
CAPCOM Okay.  
SC What is the new time for power-down?  
CAPCOM Okay, the power-down will be about 1/2 hour later. It will probably be about 21745. We want to get the state vector update at Guam and if we don't finish it there, we'll get it through Hawaii.  
SC We'll keep a computer on the line till we get a GO on the (garble).  
CAPCOM Okay, real fine.  
CAPCOM Apollo 7, we'll pick you up at Ascension at 47.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21652 (CDT 10:55a) 646/1

PAO This is Apollo Control Houston 216 hours 52 minutes. Over Ascension a couple of minutes ago, we had an interesting conversation with the crew. They were passed some sleep updates to their flight plan and we got some comments from Wally Schirra about nice the windows are in this - in the Apollo machine for taking pictures. Let's hear the conversation now.

CAPCOM Apollo 7, Houston through Ascension.

SC Roger, loud and clear.

CAPCOM Roger, Wally. We have got an update on the flight plan for a sleep period here.

SC Go ahead, Jack.

CAPCOM Okay. CMP sleep period from 216 through 225, CDR and LMP from 225 to 234.

SC That's great. My LMP is ready to get started into it.

CAPCOM Walt, the nodal crossing on rev 137 is 114.1 east.

SOn 137.

CAPCOM Firm.

SC On that last one, we got five marks and corrected the landmark.

CAPCOM Okay, copy that.

SC It was wide open on the coast early. I found that the landmark had a 3/4 mile (garble) and we picked it up and got a picture of it too.

CAPCOM Sounds real good, Walt.

SC We are trying to get pictures of the landmarks that don't have any.

CAPCOM Okay.

SC Hey, Jack.

CAPCOM Go ahead, Wally.

SC Roger. We've taken numerous packs of 70 mm, S0121. The first batch we took we shot at ASA 64 so we wouldn't have to reset the light meter for S0268 and all the other S0121 packs have been shot at an ASA of 50 and I would like to make sure that you get that to the people that process these. I've marked the pack that was shot at ASA 64.

CAPCOM Okay, copy that.

SC This is really a great machine for taking pictures out of. There are five windows, almost every time you glance up, there is one of us on it.

CAPCOM That sounds like a pretty good technique there, Wally, with five windows there.

SC (garble) we have really got a lot of good pictures.

CAPCOM Good show.

SC I wish we had a heck of a lot more

APOLLO 7 COMMENTARY, 10/20/68, GET: 21652 (CDT 10:55a) 646/2

SC film up here.  
CAPCOM Okay, we have 1 minute to LOS over As-  
cension and we are going to give a data dump over Guam  
this time, Wally.  
SC Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21750 (CDT 11:53a) 647/1

PAO This is Apollo Control 217 hours 50 minutes into the flight. Over Hawaii, we have established contact and we are having a chat with Apollo 7 and prior to that, we had some conversation via the ship Mercury. That conversation was taped while we were replaying the television tape from a pass earlier this morning. We will start off with the Mercury tape and then break into the Hawaii pass and we will probably catch up with a lot of action.

CAPCOM Apollo 7, Houston through the Mercury, standing by.

SC Just a minute.

CAPCOM Roger, Wally. We will stand by for Guam.

SC Are you going to update then?

CAPCOM Affirm. We are going to update at Guam.

SC When are you going to make the - when are you going to go on the erasable?

CAPCOM Wally, we are going to make another erasable at Guam when we get a good elevation angle, as a further check on the Navon data, which we are having - getting back from Carrarvon.

SC Okay.

CAPCOM Apollo 7, opposite omni.

SC Roger.

CAPCOM Apollo 7, Houston. If you will go to accept, we will send you the state vector update.

SC You got her.

CAPCOM Okay, coming up. I have the nav checks for you when you are ready to copy.

SC Go, Jack.

CAPCOM Okay, 221 + 30 + 0000 - 2953 - 05172 1803.

SC Roger. 221 + 30 + 4 balls - 2953 - 0517 2180.3.

CAPCOM Roger.

CAPCOM Apollo 7, Houston. We are finished with the dump, let me see, we are finished with the state vector update.

SC Say again, Jack.

CAPCOM We are finished with the state vector update. The computer is yours.

SC Roger.

CAPCOM Okay, Apollo 7, we are ready for your E mod dump. Could you key in the -

SC Houston, this is Apollo 7.

CAPCOM Go ahead.

SC Okay, the computer system is clear.

CAPCOM Okay, we are ready for the verb 74.

APOLLO 7 COMMENTARY, 10/20/68, GBT: 21750 (CDT 11:53a) 647/2

SC Computer is synching, apparently.  
CAPCOM Okay.  
SC On the way down.  
CAPCOM Roger.  
CAPCOM Apollo 7, we are about to lose you here  
at Guam. We pick you up at Hawaii at 45.  
SC You through with 74?  
CAPCOM Okay, Wally. We are through with the  
E mod dump.  
CAPCOM Apollo 7, Houston through Hawaii.  
SC Roger, loud and clear.  
CAPCOM You, too.  
CAPCOM Apollo 7, Houston.  
SC Roger, Jack.  
CAPCOM Okay, Donn. It's going to be about  
an hour before we have a printout of this E mod dump and  
you can leave the computer powered up at your option.  
SC Roger, willco, and Donn is in bed.  
CAPCOM Okay. Somebody else has got a high  
voice then.  
SC Houston, Apollo 7.  
CAPCOM Go ahead, Wally.  
SC Can you read a DSKY?  
CAPCOM Affirmative.  
SC Of course, I'm tied up holding this  
pulse down. Are you impressed?  
CAPCOM Roger.  
SC Pardon?  
CAPCOM Affirmative.  
SC That's pretty tight, isn't it?  
CAPCOM Roger.  
SC Come on, you can see through that one.  
CAPCOM (garble), Wally.  
SC Prefer to use her locked up, the IMU  
is powered down. Tom just burst in, I bet he was wonder-  
ing too.  
CAPCOM I was looking at SPS rate.  
SC No fair. That is pretty tight pulse,  
isn't it, Tom?  
CAPCOM Yes, that's as good as open.  
SC Okay, I'll be a good guy.  
CAPCOM Well, Wally, next time around we will  
give you a call and you should be passing over this typhoon  
Gloria and it will probably be night time, but you should  
see lots of thunderstorms down below you, just over the  
Mercury.  
SC We got a picture of her earlier today.  
CAPCOM Okay.  
SC She's a pretty big one. I didn't see

APOLLO 7 COMMENTARY, 10/20/68, GET: 21750 (CDT 11:53a) 647/3

SC it, Donn did. The eye of her was very  
apparent, a very large storm.  
CAPCOM It's giving the Mercury a few swells  
out there.  
SC Ah ha. It reminds me of a former Mer-  
cury CAPCOM. Has Alan B. been in today?  
CAPCOM No. He looked better than 90 though,  
last time I saw him.  
SC (Laughter).  
SC Houston, Apollo 7.  
CAPCOM Go ahead, 7.  
SC Roger. Looks like the only DTO we still  
have ready here is going to make another cut at the cryo  
stratification test. I would like to know, what are your  
intentions and what phase to do that. I would like to not  
save that thing until Monday night, for example.  
CAPCOM Okay, we will get it to you, Walt.  
SC It takes quite a while (garble). Give  
us a couple of hours and we will probably do both of them.  
CAPCOM Okay.  
SC Jack, could you give me an update on  
the time that it is appropriate for us to look for Gloria.  
CAPCOM Okay, will do.  
SC Good.  
SC And I guess we need an update on our  
fuel expended for the day, actually it should be the fuel  
remaining for the trip.  
CAPCOM Okay, in work.  
SC Roger.  
CAPCOM 7, are you reading, Houston.  
SC Reading you now. You were cut out  
there, you know.  
CAPCOM We had a hand-off. You should be see-  
ing Gloria about 219 + 04, somewhere around that time and  
the chart update values 539.  
SC All right, thank you, 539.  
CAPCOM Apollo 7, Houston, 1 minute LOS Guaymas,  
we will pick you up at Tananarive at 37.  
SC Roger.

END OF TAPE

ROLLO 7 COMMENTARY, 10/20/68, GET: 21800 (CDT 12:03p) 648/1

DEAD AIR

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21824 (CDT 12:28p) 649/1

PAO Apollo Control Houston here, 218 hours, 24 minutes, and we've had a long quiet time here since we left the Guaymas station with no contact and we expect none for another 8 minutes; at which time we should tag up via Tananarive. Just wanted to let you know we are still here, the flight is still moving along, and if you heard the last pass, you might have heard Wally comment about something reminding him of an earlier flight. I think it was in reference to the Mercury and the swells the Mercury's taking out there with storm Gloria. He said that it reminded him of the Allen B, that was in reference, of course, to Allen Barlet Shepherd Jr., one of his fellow astronauts who was a Capsule Communicator on Schirra's Mercury flight stationed on a ship in the far west Pacific, which took a tremendous buffeting from another typhoon. Shepherd and the ship managed to ride the typhoon out and they were on hand during the Sigma 7 flight and Mercury. At 218 hours and 25 minutes, this is Apollo Control Houston.

END OF TAPE

APOLLO 7, COMMENTARY, 10/20/68, GET 2184400 CDT 12:48 p 650/1

PAO Apollo Control Houston, here at 218 hours and 44 minutes into the flight via Tananarive we have tagged up with the crew. Among other things Tom Stafford passed up to them some social intelligence on the plans of the pilot's wives for this afternoon. Here is that conversation.

CAPCOM Apollo 7 Houston through Tananarive.

SC Roger Tom, we're reading you.

CAPCOM Roger, reading us loud and clear?

SC There's a little (garble) we up here

one more day.

CAPCOM Say again, Wall.

SC one more day, (garble) Then we can come

back (garble)

CAPCOM Roger, Evidently you're reading us,

we can barely read you. I'll give you a social update.

Deke is taking Jo to the ball game this afternoon. In fact,

Lo and Harriet are also going to the ball game.

SC Lo and Harriet going to the ball game

too?

CAPCOM Roger.

CAPCOM Apollo 7, Houston

SC Go ahead.

CAPCOM We would like to do a fuel cell O2 purge.

SC I can't help you until we get acquisition.

CAPCOM Thank you.

CAPCOM Apollo 7, 1 minute LOS tananarive.

Mercury at 01.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21905 (CDT 1:08A) 651/1

PAO This is Apollo Control Houston at 219 hours 05 minutes into the flight, and we've been in contact - we are in contact with the crew via the ship Mercury, and early in the pass the lunar module pilot proposes a bet with our assistant flight director here, Ed Fendell, on one of the local football games today. Here's the conversation.

CAPCOM Apollo 7 Houston through Mercury.

SC Roger, Jack.

CAPCOM Walt, your E mode dump is GO. You can power down the computer.

SC Jack, whose playing the Oilers today?

CAPCOM The jets are playing the Oilers today.

SC (garbled)

CAPCOM Fendell's giving 5 points.

SC I'll take him.

SC Hey, Tom, tell Ed I'll go for two and take the Oilers for five.

CAPCOM He's covered.

SC Candy fellow baby.

CAPCOM We'll call the results up in about 5 hours or so.

SC If we're blacked out up here we'll power down the computers shortly, and want to see if Gloria's hanging out around this area.

CAPCOM Okay, you should be coming right up on it now, Wally.

SC (garble) Nobody should miss Gloria. It's a real big G I guess.

CAPCOM No comment.

SC We see a shoreline that is brightly lighted up ahead of us here.

CAPCOM Say again, Wally.

SC A shoreline about - oh, 50 or 60 miles long and it's lighted up, looks like about 2 or 3 cities.

CAPCOM Roger.

SC We saw some lightning in the water about a minute or so ago.

CAPCOM Roger, you should be passing over it about now, or already passed over the main part of the eye.

SC Okay.

SC We just took a hot water (garbled) I really have to force it back and forth. The cold water tap on the food preparation panel down there also seems to be getting a little tough to operate.

CAPCOM Okay, copy that, Walt.

CAPCOM Apollo 7 Houston, we ran on to the same thing with the water gun in the later Gemini flights. It became stiffer as the days progressed.

APOLLO 7 COMMENTARY, 10/20/68, GET: 21905 (CDT 1:08A) 651/2

SC Roger, thanks.

CAPCOM Apollo 7 Houston, 1 minute LOS Guam.

We pick you up at Hawaii at 21.

SC Roger. I don't know if we told you, but  
the water that seems to be the freest of gas is the hot  
water spout.

CAPCOM Okay, copy.

SC I think that's one of our fans for the  
reconstitutable food.

CAPCOM Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 21927 (CDT 1:30p) 652/1

PAO Apollo Control Houston here at 219 hours, 27 minutes into the flight. We are in touch with 7 through Hawaii and here is the conversation.

CAPCOM Apollo 7, Houston through Hawaii, standing by.

SC Roger.

CAPCOM Apollo 7, Houston.

SC Yes, Jack.

CAPCOM Walt, what we would like to do is to get a heater profile on those SPS heaters. Can you copy, it won't take any attitude control or anything, just some heater ON times.

SC How long were the (garble) up?

CAPCOM It's total 6 hours, I got some times here for you.

SC Okay, I'll (garble) flight plan and we'll probably get finished up with Donn's (garble).

CAPCOM Okay, real fine. Let me know when you are ready to copy.

SC Okay, are these the SPS line heaters, that I asked you to turn on and check about 2 days ago.

CAPCOM That's affirmative.

SC Okay. It's going to help to use the A/B position. There is no change at all in the A position today.

CAPCOM Roger. Walt, let me know when you are ready to copy this and the flight plan.

SC I'm ready to copy.

CAPCOM Okay, at 220 plus 57, put the heater switch in A, the SPS line heater switch to A. At 223 plus 57 put the SPS line heater switch to A/B. At - you want to terminate the test at 227 plus 11 or anytime the propellant temperature or oxidizer T-line temperature reaches 75 degrees. Did you copy that, 7?

SC Roger, I read (garble).

CAPCOM Okay, let me give it again, we are over the Huntsville here and I'm only reading about 2 by. At 220 plus 57, SPS line heaters to A. At 223 plus 57, SPS line heaters to A/B. Terminate the test at 227 plus 11 or anytime the propellant temperature or line oxidizer line temperature reaches 75 degrees.

SC Jack, I assume you're collecting the data on it, do you want any data from me?

CAPCOM Okay, Walt, the only thing we want you to note, if you switch the heater position when you are not in station contact, would you log the time.

SC Okay, will you be in station contact at 220 plus 57?

CAPCOM Affirmative, these times are all predicated

APOLLO 7 COMMENTARY, 10/20/68, GET: 21927 (CDT 1:30p) 652/2

CAPCOM on being in station contact at that time.

SC Okay, thank you.

CAPCOM Okay, we are about 1 minute LOS Huntsville,  
we'll pick you up at Tananarive at 220 plus 13.

SC Roger.

HTV Huntsville LOS signal very weak, VHF  
down is also varying in amplitude. Huntsville LOS.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68 GET: 22015 (CDT 02:18p) 653/1

PAO Apollo Control Houston here at 220 hours  
15 minutes into the flight, and through Tananarive we are  
talking with Walt Cunningham. Here is how the conversation  
is going.

CAPCOM Apollo 7 Houston through Tananarive,  
standing by.

SC How do you read me, Jack?

CAPCOM Reading you about 2 by.

SC (garble)

CAPCOM Walt, you're coming in weak and garbled.  
Copied "did I check about the stratification test." We  
are in the process of doing that now, seeing if we can move  
it up a little.

SC Roger, out.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 22039 (CDT 2:43P) 654/1

PAO This is Apollo Control at 220 hours  
39 minutes. Apollo Control - Apollo 7 is in touch now  
with the Mercury. Let's listen.

CAPCOM Apollo 7 Houston through the Mercury,  
standing by.

SC Jack, how do you read?

CAPCOM You're about 4 by, Walt.

SC Okay, I don't know if you had me by the  
contact or not. I wanted to see if we couldn't schedule the  
(garbled) stratification test for (garbled) and 15 to 20 percent  
on the hydrogen and probably no less than 30 to 35 percent  
on the (garbled). This is to conclude being involved with it  
some time late Monday.

CAPCOM Roger, Walt. We're doing that. We're  
trying to move it up a little bit, oh, we're talking around  
232 hours now.

SC Okay, thank you very much.

SC Jack, we have a third crewman verifying  
that all three oxygen masks now. I just made a mandatory  
test of the third one.

CAPCOM Okay, I copy that.

CAPCOM Apollo 7 opposite omni.

CAPCOM And Walt I have the block data number 24  
for you.

SC Roger.

SC I'm ready to copy, Jack, and tell (garbled)  
we're glad we are going to have to verify our (garbled)

CAPCOM Say again on that.

SC Tell John (garbled) we're glad we never  
had a chance to verify the accuracy of these blocks.

CAPCOM Roger.

SC Roger.

CAPCOM Okay, block data number 24: 141 - ALPHA  
CHARLIE minus 181 minus 0100 222 plus 51 plus 52 6955 142-  
ALPHA CHARLIE minus 040 minus 0080 224 plus 26 plus 00 6134  
143- ALPHA CHARLIE plus 028 minus 0200 225 plus 58 plus 13  
5734 144- ALPHA CHARLIE plus 101 minus 0310 227 plus 30 plus  
42 5293 145-2 ALPHA plus 230 minus 0270 229 plus 06 plus 36  
4372 146-2 CHARLIE plus 288 minus 0270 230 plus 43 plus 18  
3726 end.

SC Roger, I read back follows: 141-ALPHA  
CHARLIE minus 181 minus 0100 222 plus 51 plus 52 6955  
142-ALPHA ALPHA minus 040 minus 0080 224 plus 006134  
143-ALPHA CHARLIE plus 028 minus 0200 225 plus 58 plus 13  
5734 over. It was just a break, Jack. 144-ALPHA CHARLIE  
plus 101 minus 0210 227 plus 30 plus 42 5293 145-2 ALPHA  
plus 230 minus 0270 229 plus 06 plus 36 4372 146-2 CHARLIE  
plus 288 minus 0270 230 plus 43 plus 18 3726. Over.

APOLLO 7 COMMENTARY, 10/20/68, GET: 2203900 (CDT 2:43p) 654/2

CAPCOM Rog. That's got it, except that should  
be 142 dash alpha charlie.

SC Roger.

PAO This is Apollo Control 220 hours 46 min-  
utes. The Mercury has LOS. In terms of manhours, flown  
Apollo 7 has now exceeded Gemini 7. The duration of Gemini 7  
was a few minutes over 330 hours with 2 men aboard. We're now at  
220 hours 47 minutes into Apollo 7 with 3 crewmen aboard. Next  
station to acquire will be Hawaii at 220 hours 56 minutes.  
This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 22056 (CDT 3:00p) 655/1

PAO This is Apollo Control, 220 hours,  
56 minutes. Apollo 7 is at Hawaii now.  
SC Roger, SPS (garble).  
CAPCOM Roger.  
SC Can you give me a readout on my open  
manifold pressure, please?  
CAPCOM Roger, 102.  
SC Roger, 102.  
SC Can you hit me again with the manifold  
pressure.  
CAPCOM 103.  
SC and if the redundant component check  
is still in work, I'll give you a GO next sight.  
CAPCOM Roger.  
SC Hey Jack, redundant component check  
looks like it's GO.  
CAPCOM Roger, copy that.  
CAPCOM Apollo 7, we are 1 minute LOS Hawaii.  
Ascension for a short pass at 221 plus 38.  
SC Roger.  
PAO This is Apollo Control at 221 hours,  
3 minutes. Hawaii has LOS. The next station acquiral will  
be Ascension. Apollo 7 beginning a short low elevation pass  
there at 221 hours, 38 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GBT: 2215234 (CDT 4:05P) 656/1

PAO This is Apollo Control at 222 hours  
4 minutes. We have about a minute's worth of tape from the  
Ascension pass. We had a short bit of acquisition at Tan-  
narive, but no conversation at that station. We will play  
that tape for you now.  
CAPCOM Apollo 7. Houston through Ascension.  
Standing by. SC It's about time ...  
SC Roger. A little garbled there, but good  
CAPCOM afternoon.  
SC Good afternoon. Hey Ron, (garbled)  
drinks of water? SC Roger. Six clicks?  
CAPCOM Houston, Apollo 7. Over.  
SC Houston. Go.  
CAPCOM Roger Ron. Will you log me 25 clicks  
SC of water please?  
CAPCOM Wilco. 25 clicks.  
SC Hey Ron, we'll all be off comm here for  
about 30 seconds. We are trying something.  
CAPCOM 7, Houston. Say again.  
SC Roger. I will be off comm for about  
30 seconds here. Roger.  
CAPCOM Back with you Ron.  
SC Roger. About LOS. We still show your  
CAPCOM secondary glycol loop activated.

END OF TAPE

PAO This is Apollo Control 222 hours 13 minutes. Apollo 7 is in its 140th revolution. Coming up on the Mercury now.

CAPCOM Apollo 7. Houston through Mercury.  
Standing by.

SC Roger Ron.  
CAPCOM Read you loud and clear.  
CAPCOM Apollo 7. Houston.  
SC Houston. Apollo 7.  
CAPCOM Roger. We show the secondary loop still on. Is that your intention?

SC It is off now. Ron I just finished putting the suit on.

CAPCOM Roger.  
SC Without gloves - without helmet. Do you read?

CAPCOM Roger.  
SC And strapped in, blocking my feet up and I feel that is the way I am going to come in Monday morning-Tuesday morning. It is with suits, no gloves, no helmets, so that a pad to headrest on either side and wear a comm carrier instead of our lightweight headsets.

CAPCOM Roger.  
SC Our heads are still too stuffed up to try to come in with our helmets on and take them off and try to blow our nose.

CAPCOM Roger. Understand.  
SC Okay. You might pass on Deke that I actually got in with a suit on, strapped down and tried it out.

CAPCOM Will do.  
SC Very good.  
CAPCOM Apollo 7. Houston. Opposite omni.  
CAPCOM Apollo 7. Houston. One minute LOS.  
Hawaii at 34. And may have some (garbled) shortly.

SC Roger.  
PAO This is Apollo Control. 222.22 minutes. LOS at Mercury. Wally Schirra reported during this pass that he has donned the suit, strapped himself in the couch as a test of the way in which the crew now believes they will reenter on Tuesday. It's with the suit on, no helmets and no gloves. He indicated they will pad the headrest and he believes this will be satisfactory for entry. Next station to acquire will be Hawaii. A very low elevation past there less than 1 degree, but we will have about 2 minutes of acquisition beginning at 222 hours 34 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 22234 (CDT 435p) 658/1

PAO This is Apollo control at 222 hours 34  
minutes, Apollo 7 about to tag up at Hawaii.

CAPCOM Apollo 7, Houston, through Hawaii  
standing by.

SC I hear you loud and clear.

CAPCOM Roger, the same.

SC What's the late news on a Sunday  
evening.

CAPCOM I've got a final on the Dallas and  
Minnesota football game. Dallas 20, Minnesota 7.

SC That's nice. Any scores on the Oilers  
yet?

CAPCOM No, they just started at three.

SC Oh, I see.

CAPCOM I don't have the score yet. - Looks  
like our Kansas boy Jim Ryun, got second in the 1500 meters  
in the Olymics.

SC Oh, really. He's the miler isn't he  
Ron.

CAPCOM Roger.

SC Who got first.

CAPCOM Kip Kano of Keyna.

SC Yea, they used to be a rival on it.

CAPCOM Right.

PAO This is Apollo control 222 hours 36  
minutes, Hawaii has LOS now. The next station to acquire  
will be the Redstone at 222 hours 47 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 22247 (CDT 450p) 659/1

PAO This is Apollo control at 222 hours  
47 minutes into the mission. The Redstone has acquisition  
now.

CAPCOM Apollo 7, Houston, through Redstone.  
SC Roger.  
CAPCOM Roger. When you get a chance, request  
pyro A and B volts and batt C volts.  
SC Roger, Ron, batt C is reading 36 volts.  
CAPCOM Roger.  
SC Looking over tomorrows flight plan.  
CAPCOM Go.  
SC I see no hold for the TV beam, except for  
(garble) seven hour period. And there I think we would have  
it as a very passive affair, where we don't do any thing to  
set it up, just hook it up and let her rip.

CAPCOM Roger.  
SC Now the next period just prior to 239  
hours, I'd say we're busy.  
CAPCOM Roger.  
SC So during that ninth period I guess  
we'll come across the states, the 237 plus 30, looks like  
we could do it if we just plug it in and turn it on.

CAPCOM Roger, I'm not sure what we had scheduled  
or if we had any, let me check and I'll pass the word up.  
SC We're not volunteering, that's our only  
out though.

CAPCOM Roger.  
SC Our series end tomorrow.  
CAPCOM Hey, that's right.  
SC Yea, we had it (garble) coming on  
Monday morning, Tuesday morning, correction.  
CAPCOM Right.  
SC Telling you ahead, happily.  
CAPCOM Good.  
SC Pyro A 36.8, pyro B 36.8.  
CAPCOM Roger, and I have your ampere hours  
remaining.

SC Roger, wait one - I've got another hour  
to run on SPS line (garble) before going to A slash B, right?  
CAPCOM Concur.  
SC Go ahead, with batteries.  
CAPCOM Batt A 26.7, correction 27.6 for batt A.  
Batt B 25.2, Batt Charlie 39.5.  
SC 76252395.  
CAPCOM Roger. - Apollo 7, Houston, one minute  
LOS, Acension at 12.  
SC Right.  
PAO Apollo control at 222 hours 54 minutes,

APOLLO 7 COMMENTARY, 10/20/68, GET: 22247 (CDT 450p) 659/2

PAO Apollo 7, beyond the range at Redstone. Wally Schirra reported during this pass that the activities tomorrow dictate that the TV schedule will be at 237 hours 30 minutes, this is about 3 and a half hours later than originally scheduled. He indicated that the crew would turn the camera on at that time and let it run through out the pass. The next station to acquire will be Acsension at 223 hours 12 minutes. This is mission control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2231200 (CDT 5:15p) 660/1

PAO This is Apollo Control at 223 hours 12 minutes. Apollo 7 is in revolution number 141 and Ascension is about to acquire. We'll stand by.

CAPCOM Apollo 7 Houston through Ascension standing by.

SC Roger, loud and clear.

CAPCOM Roger, the same.

CAPCOM 7 Houston.

SC Go ahead.

CAPCOM Rog. Wait, you might be interested to know that when you were operating on the secondary loop, there, the primary outlet temperature went down to about 9 to 10 degrees.

SC Glycol evaporator outlet?

CAPCOM Negative. Your radiator outlet temperatures.

SC Okay, the heaters didn't come on, though, huh?

CAPCOM Negative. Everything is operating normally, now though.

SC Did it go down to plus 9 or 10, or minus?

CAPCOM Plus. Plus 9 or 10.

SC Okay, no sweat. That's my fault, Ron. We were busy fiddling around here with the re-entry plans, checking out the couch stuff.

CAPCOM Roger. I just thought maybe, you'd be interested.

SC Hear it's brisk?

CAPCOM It sure is.

SC Do you have a copy of our canister (garble) there?

CAPCOM Wait one and I can pick it up.

SC Okay.

CAPCOM 7 Houston. I have it now.

CAPCOM Apollo 7 Houston. I have your canister card now.

SC Roger, we just didn't change number 19.

CAPCOM Yeah, Roger, what's your problem?

SC We changed to 21N.

CAPCOM Roger. One more to go.

SC And then the (garble) we'll do it. I think we'll put number 1 back in again and we're all done.

CAPCOM Roger.

SC Both (garble) guys are getting along. We found we were right on (garble) when we got all done today, too.

CAPCOM I see what you're saying.

SC There's no crisis there. We're just thinking about it.

APOLLO 7 COMMENTARY, 10/20/68, GET: 2231200 (CDT: 5:15p. 660/2

CAPCOM Roger.  
CAPCOM Apollo 7 Houston. 1 minute LOS Mercury  
at 50.

SC Roger.  
PAO This is Apollo Control at 223 hours  
21 minutes, LOS at Ascension. The Mercury, the next station  
to acquire, is still in stormy seas out in the Western Pacific.  
Today they report waves at 15 feet and the ship is continuing  
to roll at 20 degrees. Apollo 7 will be within range of the  
Mercury at 223 hours 50 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2235000 (CDT 5:50p) 661/1

PAO This is Apollo Control at 223 hours  
50 minutes into the mission. Apollo 7 about to be acquired  
at the Mercury. Guam has overlapping coverage. Mercury  
reports a problem with its Unified S-band antenna. So we  
will only have VHF voice during this rev. We'll stand by.  
CAPCOM Apollo 7 Houston, through Mercury.  
SC Roger, I read you loud and clear.  
CAPCOM Roger. The same. We have no data from  
Mercury this time.  
SC Okay.  
CAPCOM We'd like to delay switching to A/B on the  
SPS line heaters until we acquire Guam.  
SC What's wrong down there?  
CAPCOM Apollo 7 Houston.  
SC Go ahead. Go ahead, Ron.  
CAPCOM Roger. We're using the FM biomed channels  
for some special instrumentation that are different instru-  
mentation. So we'd like to cycle the cryo fans, tank 2 fans,  
once we acquire Guam. Now, I'll give you the go on it.  
SC Roger.  
SC Say, Ron, (garble) tank 2 fans, or not?  
CAPCOM Affirmative.  
CAPCOM 7, here's (garble) ready to copy?  
SC Rog.  
CAPCOM Rog. rev 141 GET 233 plus 26 plus 34  
longitude 21.7 east.  
SC Ron, do you mean 223 or 233?  
CAPCOM Roger. I mean 223. 223.  
SC Rog. Would you like for me to update?  
CAPCOM Yeah.  
CAPCOM (garble) We'll have that redone.  
CAPCOM Apollo 7 Houston, request SPS line heaters  
to A/B and your temperature readout.  
SC Swell, that right then you should call  
for it and we're reading, at my gage, for what it's worth,  
about 67.  
CAPCOM Roger.  
CAPCOM Walt, we're reading 65 down here, and  
we'll delay the cryo tank fan cycle until Redstone. Not  
enough time, now.  
SC Well, I can do it by myself, can't I?  
CAPCOM Negative. We'd like to get some - we've  
got some special readouts coming in on it. We'd like to pick  
it up over a station. Both the on and the off cycle of the  
fans.  
SC Okay.  
CAPCOM And, 7, the 1 line flight plan update.  
SC Go ahead.  
CAPCOM Roger, at 224 plus 47, set down voice

APOLLO 7 COMMENTARY, 10/20/68, GET: 2235000 (CDE 5:50p) 661/2

CAPCOM backup check over Ascension. We will  
command all switching from the ground.

SC Roger, I'll stand by then.

CAPCOM Roger.

CAPCOM Approaching LOS Redstone at 21.

PAO This is Apollo Control 224 hours 2 minutes  
into the mission. Guam has LOS. Next station to acquire  
will be Redstone, at 224 hours 21 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2242100 (CDT 6:20p) 662/1

PAO This is Apollo Control at 224 hours  
21 minutes into the mission. The Redstone has just acquired  
Apollo 7. We'll monitor this pass.

CAPCOM Apollo 7 Houston through Redstone.

SC (Garble)

CAPCOM Roger (Garble) we're waiting for data  
before we cycle the cryo fans.

SC Sure, Ron. Walt's troubleshooting the  
switch, I believe. You got that?

CAPCOM This is part of it, but we're using the  
FM that we use to have the biomed on it, to get some more  
data.

SC Roger, we've got that (garble)

CAPCOM Apollo 7 Houston, opposite OMNI.

CAPCOM Apollo 7 Houston, request 02 tank 2 fan on.

SC Roger, we have our 02 tank system on.

CAPCOM Roger, 20 clicks for LMP.

SC (garble) 15 clicks?

CAPCOM Roger.

SC Say, Ron, we just went by the Tuamotu  
Archipelago, out here, and for 4 minutes solid we went by  
Coral reefs, atoll, I should say.

CAPCOM Roger.

SC That seems (garble) more than nothing  
at all.

CAPCOM Wow½

SC You should be locked up with him for  
11 days.

CAPCOM That's right.

CAPCOM 7 Houston, I've got some football scores  
here. New York 20, Houston 14.

SC 14? Bad news.

CAPCOM Roger.

SC Are you sure that's the correct score?

CAPCOM That's affirmed.

SC Looks like New York had a good day.

CAPCOM Roger.

SC (garble) only gave me 5 points.

CAPCOM San Francisco was 26 New York 20, Cleve-  
land 30 Baltimore 20, St. Louis 31 Washington 14, Chicago 29  
Philadelphia 16, Green Bay 14 and Detroit 14.

SC (Garble)

SC Jack, what about the Rams?

CAPCOM Apollo 7 Houston 02 tank 2 fan off.

SC Roger.

CAPCOM 7 Houston, 1 minutes LOS. Ascension 47.

SC Roger. What time Ascension?

CAPCOM At 47.

SC Roger.

APOLLO 7 COMMENTARY, 10/20/68, GET: 2242100 (CDT 6:20p) 662/2

CAPCOM                    7 Houston, L.A. 27, Atlanta 14.  
PAO                        This Apollo Control 224 hours 30 minutes.  
Redstone has LOS. During this pass Walt Cunningham reported  
seeing a Coral Atoll in the area. Wally Schirra couldn't  
resist the pun that it's better than seeing nothing a'tall.  
Ascension will acquire next shortly after Apollo 7 enters  
its 142 rev. Acquisition there at 224 hours 47 minutes.  
This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 22447 (CDT 650p) 663/1

PAO This is Apollo control at 224 hours 47 minutes, Apollo 7 is in the night side of its 142 revolution as Ascension gets acquisition.

CAPCOM Apollo 7, Houston, through Ascension.  
SC Loud and clear, Ron.  
CAPCOM Roger. - Apollo 7, (garble).  
CAPCOM Apollo 7, Houston, voice check you'll be coming down - down voice backup.  
SC Very well, do you want me to configure now.

CAPCOM Negative, we have configured from the ground. All you have to do it talk.  
SC What I'm I here for?  
CAPCOM (laughter) Just talk.  
SC I'm testing down voice backup and I wish I had those little command switches so I could throw my own.

CAPCOM Yea, right, that's a pretty good deal, he pushes one button and switches all those things.  
CAPCOM Now you're coming through  
SC That's right, asked them if they can rock their spacecraft down there will you.  
CAPCOM Okay. That down voice backup, that's good voice, nice and clear.  
SC Okay, would you asked them to please switch my ranging back on and down voice back up to where they can back us.

CAPCOM Roger, your ranging is still on.  
SC Thank you. You get better down voice without it.

CAPCOM Roger, we concur, but we want to test it this way also. That's why we're checking this time now Walt, is ranging and down voice back up.  
SC Say that again.  
CAPCOM Roger, we are checking down voice back up along with ranging on this test.  
SC I understand, Ron.  
CAPCOM By the way LA beat Altanta 20 to 14.  
SC Roger, they're still undefeated then.  
CAPCOM I assume so. San Diego over Denver 41 to 17.  
SC Okay, I'm going to bed, good night  
Ron.

CAPCOM Roger, good night, see you tomorrow.  
SC Hello there.  
CAPCOM Hey good morning.  
SC How did the Oilers do?  
CAPCOM Not too well. They lost to New York 14 to 20.

APOLLO 7 COMMENTARY, 10/20/68, GET: 22447 (CDT 650p) 663/2

SC Oh.  
CAPCOM Hey, Donn.  
SC Yea, Ron.  
CAPCOM Rog, you better check your food, Wally  
said he was one meal short there and not quite sure where  
he's going to get it so you better check your food and see  
if he's eaten yours.  
SC Yea, thanks for the tip. I'll be  
keeping an eye on it.  
CAPCOM Okay.  
SC I don't know what he did while I was  
asleep.  
CAPCOM Apollo 7, Houston, one minute LOS  
Mercury at 26.  
SC Roger, Mercury 26.  
PAO Apollo control at 224 hours 58 minutes,  
Ascension has LOS now. Donn Eisele awake during this pass,  
Wally Schirra and Walt Cunningham beginning their sleep  
period. Donns breakfast hour is scheduled during this  
next hour 225 hours to 226 hours. It's a quiet time in the  
flight plan. Next station to acquire will be Mercury at  
225 hours 25 minutes. This is mission control, Houston.

BND OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2252500 (CDT 7:30p) 664/1

PAO This is Apollo Control at 225 hours  
25 minutes. The Mercury is about to acquire Apollo 7. Guam  
has overlapping coverage on this rev.

CAPCOM Apollo 7, Houston through Mercury standing  
by.

SC Roger, Houston, Apollo 7.  
CAPCOM Roger, loud and clear. Apollo 7, Houston  
opposite OMNI. Apollo 7, Houston, opposite OMNI.

SC Roger.  
CAPCOM Apollo 7, Houston, 1 minute till LOS.  
Redstone at 57.

SC Roger, understand.  
CAPCOM Roger.

PAO Apollo Control at 225 hours 38 minutes.  
Guam has LOS. Very little conversation during the Mercury  
and Guam pass as we give Donn Eisele time enough to finish  
his breakfast. Next station to acquire will be the Redstone  
at 225 hours 57 minutes. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/10/68, GET: 2255700, (CDT 8:00p) 665/1

PAO This is Apollo Control at 225 hours  
57 minutes, Apollo 7 coming upon the Redstone now. We'll  
stand by through this pass.

CAPCOM Apollo 7 Houston through Redstone.  
SC Roger, Houston, Apollo 7.  
CAPCOM Roger, Loud and clear.  
CAPCOM 7 Houston, we'd like to power up the CMC  
over Redstone and power down over Ascension.  
SC Okay, fine.  
CAPCOM Apollo 7 Houston.  
SC Roger, Houston, go.  
CAPCOM Rog. We're just about due for a cycle  
on our H2 heaters, and we can finish this last cryo H2  
stratification test, there. If it's convenient for you to  
turn the H2 heaters and fans off at this time.  
SC Roger. I can turn the heaters and fans  
off at this time.  
CAPCOM Roger, proceed and then this will start  
the H2 cryo stratification test.  
SC Alright, fine. Starting at 2602.  
CAPCOM Roger.  
CAPCOM 7 Houston, we read 233 psi in tank -  
H2 tank 1 and 231.3 in tank 2.  
SC Roger. 233, 231. Thank you, Ron.  
CAPCOM Roger.  
SC (garble) our meters read - well it's a  
little hard to resolve it that close, I'd say about 228 and  
226 from our view.  
CAPCOM Roger, copy.  
SC Looks like we're about 5 pounds below you.  
CAPCOM Apollo 7 Houston. About 30 seconds LOS.  
Ascension at 23 and your state vector is good.  
SC Okay, thank you.  
PAO This is Apollo Control 226 hours 06 minutes  
into the mission. The Redstone has LOS. Ascension will be  
the next station to acquire at 226 hours 23 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2262300 (CDT 8:25p) 666/1

PAO This is Apollo Control, 226 hours 23 minutes into the mission. Apollo 7 being acquired at Ascension. About the time of Ascension LOS, the Canary Island station will have AOS.

CAPCOM Apollo 7, Houston through Ascension.  
Apollo 7, Houston through Ascension.

SC Roger, Houston, Apollo 7.

CAPCOM Roger, read you Donn.

SC Roger.

CAPCOM 7, Houston verify SPS line heaters were turned off.

SC Negative, they were not turned off. Did you want them off now?

CAPCOM Wait one - stand by. 7, Houston we were predicting that we would be up to 75 degrees here, but the curve tapered off so we will advise when to turn them off.

SC Okay, I'm still reading 72 degrees right now.

CAPCOM Roger, concur.

SC Could you give me the hydrogen pressures again please?

CAPCOM Roger, right now H2 tank 1 232, H2 tank 2 230.

SC Rog.

CAPCOM And Apollo 7, Houston, we're Go for CMC power down.

SC Okay.

CAPCOM 7, Houston, have you ever taken the optics eye pieces off and looked through the optics out there?

SC We've taken them off, do you say?

CAPCOM That's affirmative, or do you normally leave them mounted in position?

SC Oh, about 50, 50. Sometimes we put them away, and sometimes we just leave them there. Depends on what we're going to do, if we're going to be real active in the LEB doing other things we usually put them away because they're in the way.

CAPCOM Roger. I've got a little degradation type thing I'll pass up to you here shortly.

SC Okay. Fact is they're stored right now.

CAPCOM Roger. Apollo 7, Houston. you can turn the H2 heaters on, now, and stratification test at your convenience.

SC Okay, heaters going on now.

CAPCOM Roger.

APOLLO 7 COMMENTARY, 10/20/68, GET: 2262300 (CDT 8:25p) 666/2

CAPCOM On this optics degradation what we want do is remove the sextant and telescope eye pieces. And then observe the internal lens of both the sextant and telescope with your eyeball about a foot away from the panel during a day side pass with the optics pointed somewhere above the horizon.

SC Optics pointed where, above the horizon.

CAPCOM Optics above the horizon. And you should be able to observe some deposits on this objective lens similar to the ones that are on the windows.

SC (garbled)

CAPCOM Say again, Donn.

SC I say that even if the optics are off (garbled) lifted off.

CAPCOM I still didn't copy that very well, Donn.

SC Just disregard.

CAPCOM You're clear now, say again.

SC Okay, when the eye pieces are installed the view through the optics is as good now as it was at the start flight.

CAPCOM Roger, understand. What we would like to do is get your evaluation with the eye pieces off, and see if you can see any deposits on those lens though.

SC Roger.

CAPCOM Apollo 7, Houston, 30 seconds LOS.  
Mercury at 03.

SC Roger, Houston.

FAO This is Apollo Control, 226 hours 37 minutes. Canary's has LOS. During this pass which started at Ascension and continued uninterrupted through the Canary's acquisition, we continued the hydrogen stratification test, powered down the computer, and we passed up some information to Donn Eisele on a test to see whether the optics have been degraded by any deposits such as have been seen on the windows. We asked him to take a look through the optics with the eye pieces removed during a daylight pass. Donn reported that with the eye pieces on the view through the optics now is as good as it was at the start of the flight. The Mercury the next station to acquire at time 227 hours 2 minutes 56 seconds. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2270200 (CDT 9:05p) 667/1

PAO This is Apollo Control at 227 hours  
02 minutes into the mission. Apollo 7 coming up on a short  
low elevation pass at the Mercury, followed by an overlapping  
brief coverage at Guam.

CAPCOM Apollo 7 Houston, through Mercury, stand-  
ing by.

SC Roger, Houston.

CAPCOM Roger.

CAPCOM Apollo 7 Houston, opposite OMNI.

SC Roger.

CAPCOM Apollo 7 Houston, SPS line heaters off.

SC Roger. Give me a couple of minutes.

CAPCOM Roger.

CAPCOM Apollo 7 Houston.

SC Roger, go ahead Ron.

CAPCOM Roger, on the H2 pressures, we show  
256 and 254.

SC (garble) say it again.

CAPCOM Roger. Your H2 tank pressures, 256 and  
254.

CAPCOM And 7 Houston, our oxidizer line tempera-  
ture now reads 80 down here.

CAPCOM 7 Houston, 30 seconds LOS Redstone at 32.  
and verify SPS line heaters off.

PAO Apollo Control at 227 hour 11 minutes.  
Guam has LOS. we continued the cryogenic stratification  
test during this pass and we have ended the service propulsion  
system line heater test. The next station to acquire will be  
the Redstone at 227 hours 32 minutes. This is Mission Control,  
Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2273200 (CDT 9:35p) 668/1

PAO This is Apollo Control at 227 hours  
32 minutes. Apollo 7 coming within the range of the Redstone  
now. We'll stand by for this pass.  
CAPCOM Apollo 7, Houston through Redstone standing  
by.  
SC Roger, Houston.  
CAPCOM Roger.  
SC I completed that stratification test.  
I just finished completing it.  
CAPCOM Roger, copy. Apollo 7, Houston I have  
a flight plan update when you're ready to copy.  
SC Okay, Ron, stand by for just one here.  
CAPCOM Roger, no hurry.  
SC Go ahead with your flight plan update,  
Ron.  
CAPCOM Roger, at 228 plus 30 optics degradation  
test. That's what we were talking about a while ago. At  
229 plus 50 oxygen fuel cell purge. At 230 plus 00 02 cryo  
stratification test number 3. We will advise further details  
later.  
SC Okay.  
CAPCOM At 232 plus 00 extend playmates sleep  
period to 234 plus 00.  
SC Roger, got that.  
CAPCOM Normal SPS burn prop accept. At 236  
plus 00 dump waste water to blank percent. It's about  
50 percent; we'll update that later.  
SC Okay.  
CAPCOM We want to get the right amount to be  
in the tank for de-orbit.  
SC Is there a right amount for de-orbit?  
CAPCOM That's affirmative. They're full, in  
other words for de-orbit. About 90 percent is what we're  
trying for.  
SC Oh, I see, okay.  
CAPCOM At 236 plus 50 backup GDC/IMU alignment,  
delete SCS backup align. At 237 plus 16 TV turn on.  
SC Yeh, Ron, I don't see how that's going  
to work out too well. We're here - that's right in the middle  
of the pass we're doing this alignment and you've got to be  
darkened down from in here.  
CAPCOM Wait a minute, I think I stated that  
wrong. That should be 237 plus 16.  
SC Yeh, I see what you mean. Okay, Ron,  
but you may not get it because if we're not finished with  
that alignment we're going to keep on with it.

APOLLO 7 COMMENTARY, 10/20/68, GET: 2273200 (CDT 9:35p) 668/2

CAPCOM Roger, it's just a passive TV pass any how.  
SC Okay, wait a minute was that the end of  
night period. Oh, I guess it is, my flight plans a little  
low.

CAPCOM Yes. It was also there at CDR request.  
SC Yeh, I've got it here. Yeh, that'll  
work out.

CAPCOM Okay, TV pass is 237 plus 18 to 237 plus  
30. At 237 plus 30 oxygen fuel cell purge.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2274200 (CDT 9:45p) 669/1

CAPCOM At 238.  
SC State it again Ron.  
CAPCOM Roger, we're about LOS. I'll pick you  
up at the Canarys at 03.  
SC Okay.  
PAO Apollo Control at 227 hours 43 minutes.  
Redstone has LOS. Next station to acquire will be the Canary  
Islands at 228 hours 03 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 22803 (CDT 1005p) 670/1

PAO This is Apollo control at 228 hours 03 minutes into the mission, Canary Islands is about to acquire Apollo 7. The Madrid station has some overlapping coverage.

CAPCOM Apollo 7, Houston, through Canarys.

SC This is Apollo 7.

CAPCOM Roger, loud and clear, Donn. We can continue with the star plan update if you're ready.

SC Go ahead.

CAPCOM Roger, did you get the fuel cell 02 purge at 237 plus 20.

SC No, I'll start there.

CAPCOM Roger, at 237 plus 30 oxygen fuel cell purge.

SC Okay, we just had one at 230.

CAPCOM That's affirm, this is the one just prior to burn to make the fuel cell take more of the load.

SC Oh, I see, okay.

CAPCOM At 238 plus 30 delete Bravo prior Huntsville and Alpha prior Guam or Guyamas.

SC (garble).

CAPCOM Roger, at 239 plus 06 present GETI burn 7.

SC Affirmative.

CAPCOM Okay, I've got a change on that - on the one I gave up to you, at 230 plus 00 delete that CYRO stratification tests.

SC (garble).

CAPCOM Yea. Now it looks like the heat leak is such that the heat leak into the tanks is equal to the useage out and the pressures are - remain constant now, so you can't do one.

SC Well, okay.

CAPCOM Roger. And one thing I wanted to make clear at 236 plus 50.

SC Yea.

CAPCOM Roger, that's a back up GDC alignment and the IMU is not to be caged it's an alignment test.

SC Right, we'll leave the IMU interzoned, while we fly back to it.

CAPCOM Roger. A little advanced information looks like you only have about 12 to 13 minutes to get those stars in there and we plan to pass up some information for a local vertical attitude and kind of a AOS time at the stars.

SC Oh, okay, fine, that will help.

Why do you say we've only got 12 or 13 minutes.

CAPCOM That's the only time the stars will be in the field of view.

SC Oh, swell.

APOLLO 7 COMMENTARY, 10/20/68, GET: 22803 (CDT 1005p) 670/2

CAPCOM And they'll start going under the horizon after that time.

SC Oh, that's not such a hot deal is it, this is supposed to be our backup alignment method, if we've only got 12 minutes per night pass to find them that's kind of a difficult thing to do if you didn't have help.

CAPCOM Roger, we understand, that's the best we can do at this setting though.

SC Oh, it looks like a poor choice of stars.

CAPCOM I copied that.

SC That's interesting, I noticed the curious night pass that the other cross was just barely above the horizon and that was only for a few minutes and it started going down.

CAPCOM Roger. 7, Houston, we could use a kind of a crew status report there of yourself if you've got a chance.

SC Roger, I'm still holding up. Had a real good nights sleep, a good eight hours I guess and my cold seems better at least I'm not blowing my nose as much and my ears stay clear more than a greater proportion of the time then they were earlier.

CAPCOM Yes, that's real good.

SC I don't know whether Wally and Walters have improved any or not, I don't think they have to speak of. I took one lomo pill before I went to sleep, that was around - well, when ever it was that I went to sleep.

CAPCOM Roger.

SC I took it about 215 or 216.

CAPCOM What was that 215 or - oh, that was the time, okay.

SC About 215 hours or thereabouts.

CAPCOM Roger.

SC I haven't kept too close a track of the water, I think it's been around 20 to 30 clicks.

CAPCOM Roger.

SC A combination of before I went to sleep and then after I got up.

CAPCOM About 30 seconds LOS at Canarys, we've got Madrid for about 1 minute.

SC Roger.

CAPCOM You Redstone at 08.

SC Roger, Redstone at 08.

PAO Apollo control at 228 hours 14 minutes Madrid has LOS. We completed the flight plan update on this pass also got a run down on Donn Eiseles health, he reported he got a good eight hours sleep, his cold seems better, his ears are clear more often now. Next station

APOLLO 7 COMMENTARY, 10/20/68, GET: 22803 (CDT 1005p) 670/3

PAO to acquire will be Redstone, we'll miss the Mercury and Guam this rev. Apollo 7, in its 144 revolution. Redstone due to acquire at 229 hours 07 minutes. This is mission control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2282900 (CDT 10:30p) 671/1

PAO This is Apollo Control at 228 hours 25 minutes. Prior to acquisition of Apollo 7 at the Mercury, the next tracking station, we will have a change of shift in the control center. This shift has been essentially a quiet one. We'll give you a recap of the major items on the shift. During - early in the shift, during rev 140, at about 222 hours 14 minutes elapsed time over the Mercury, Wally Schirra reported that he had conducted a test. He had donned the suit, strapped himself in the couch, reported that he believed that they would re-enter Tuesday in suits, with the headrest padded, but with no helmets and gloves. He tried that out during the test and it seemed to work very well. Later in that same pass, that same rev rather, over the Redstone, Schirra reported that he would change the TV times tomorrow because of the busy schedule of activities. And the elapsed time for the television pass was changed to 237 hours 18 minutes elapsed for the start of the pass; 237 hours 30 minutes for the end of the pass, in Central Daylight Time that's 7:20 A.M. to 7:32 A.M. Tracking ship Mercury in the Pacific still reported stormy seas, waves of 15 feet; the ship rolling as much as 20 degrees. Mercury, during one rev, also had a U S-B antenna problem and we used VHF voice. We have not had any particular problems since then with the Mercury. Conducted several tests during this shift. Communications tests at several stations. Conducted a test of the service propulsion system line heaters and we conducted another cryogenics stratification test this time on the hydrogen tanks. We powered up the command module computer in rev 142 over the Redstone at 225 hours 57 minutes; checked some information in the computer; powered back down a station later at Ascension. At Ascension we passed up some procedure for optics degradation test, which is scheduled to begin in about 2 minutes. We asked Donn Eisele to take a look through the optics with the eyepieces removed during a day pass to see whether he could observe any deposits on the internal lens. These are deposits such as have appeared on the windows. At that time, Eisele reported that so far, with the eyepieces on, that the view is as good now as it was at the start of the flight. Over the Redstone, in rev 143, we started a flight plan update, which included the new TV times; times for a waste water dump; we continued that update during this last contact at the Canaries and at Madrid, taking the flight plan up through SPS burn number 7, which is scheduled for 239 hours 06 minutes elapsed time. Donn Eisele reported at that time, that he had a good 8 hours sleep, that his cold seems better and his ears are clear. That essentially covers the activities on the shift. There will be no change of shift press briefing tonight. The third shift headed by Jerry Griffin will have a news conference in the morning. Estimated time

APOLLO 7 COMMENTARY, 10/20/68, GET: 2282900 (CDT 10:30p) 671/2

PAO right now between 7:30 and 8:00. Next station to acquire will be the Redstone at 229 hours 07 minutes. At 228 hours 31 minutes, this is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2290700 (CDT 11:10p) 672/1

PAO This is Apollo Control 229 hours 07 minutes into the mission of Apollo 7. We are approaching the Redstone tracking station, we should have acquisition in a very few seconds; let's stand by.

CAP COM Apollo 7, Houston through Redstone, standing by.

SC Roger, Houston.

CAP COM Roger, loud and clear.

SC Houston, Apollo 7.

CAP COM Houston go.

SC I looked through the optics and I couldn't tell much in the way of dirt in there. The sextant looked clean as a whistle, there was some little light spots in the telescope which could be dirt particles catching light, you know, reflecting.

CAP COM Roger, but you didn't see anything that looks like the command module windows?

SC That looked like what?

CAP COM Any of the deposits we have on the command module windows?

SC No, I couldn't tell anything like that. You mean on the surface - the innersurface of the - next to the spacecraft or are you looking through the whole thing?

CAP COM Well, looking through the whole thing and also on the innersurface anywhere that you can see.

SC No, I didn't see anything like that that looked like our window degradation at all.

CAP COM Roger, copied.

SC They were clean as a whistle except for the little specks on the telescope which do not apparently effect the field of view when you've got the eye piece in.

CAP COM Roger. Sounds good then.

SC Yeah, I haven't noticed any change at all in the way the stars look or the ground looks from the day we took off.

CAP COM Roger.

SC In fact on such a ... flight, I'd like to suggest they rig up some type of a deal where you could mount a camera on there and take pictures through it. It's an excellent window for that kind of thing.

CAP COM Roger.

Apollo 7, Houston.

SC Go ahead

CAP COM Rog, I've got about three flight planning questions here on the completion of things.

SC Okay, go ahead.

CAP COM Roger. Has a second sextant calibration test been performed?

APOLLO 7 COMMENTARY, 10/20/68, GET: 2290700 (CDT 11:10p) 672/2

SC No, we haven't done that.  
CAP COM Roger, and --  
SC I guess the first one didn't come out  
too well. I mean I only got one star.  
CAP COM Roger. And how about the optics calibration test, have two of those been performed?  
SC Don't remember what that is. You mean the COAS calibration?  
CAP COM No, that's the first part of P-23. It's that trunion ... check thing.  
SC Oh yeah. No, I did that the same time I did the sextant calibration.  
CAP COM Roger, and how about the window photography as described in the DTO S-20.16?  
SC Ah, I haven't taken any pictures, I think Walt and Wally have taken some along the way. I don't know if we did it exactly to that DTO but I think we ... intent of it.  
CAP COM Roger, understand, and 7, Houston, opposite omni.  
SC ...  
CAP COM Apollo 7, Houston. Opposite omni again please. (pause) Apollo 7, Houston, one minute LOS, Antigua at 27.  
SC Roger.  
PAO This is Apollo Control 229 hours 18 minutes into the mission of Apollo 7. We've just lost acquisition at the Redstone tracking ship, we are completing our 144th revolution at this time approaching the West coast of South America. At 229 hours 19 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 22927 (CDT 11:30) 673/1

PAO This is Apollo Control, 229 hours,  
27 minutes into the mission of Apollo 7. We're now at the  
point of acquisition at the Antigua Tracking Station. Let's  
listen in.

CAPCOM Apollo 7, Houston, through Antigua,  
standing by.

SC Roger.

CAPCOM Apollo 7, Houston, 1 minute LOS, Antigua  
Canaries at 38.

SC Roger, good morning.

CAPCOM Good morning. And goodbye, we'll see  
you tomorrow, Don.

SC Oh, okay, Ron. Have a good day.

CAPCOM Roger.

SC Good night or whatever it is.

PAO This is Apollo Control, 229 hours,  
36 minutes into the mission of Apollo 7. Our next acquisi-  
tion point will be Canary Islands at 22930. At 229, correc-  
tion, 22938. Our time right now is 22936. This is Apollo  
Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 22938 (CDT 11:42) 674/1

PAO This is Apollo Control, 229 hours,  
38 minutes into the mission of Apollo 7. We have acquired  
Canary Islands Tracking Station on the one hundred forty  
fifth revolution the beginning of the one hundred forty  
fifth, we'll standby for conversation.

CAPCOM Apollo 7, Houston, through Canary stand-  
ing by.

SC Roger, Bill.

CAPCOM Apollo 7, Houston, opposite omni  
please. Apollo 7, Houston, coming upon LOS Canaries in  
about 1 and 1/2 minutes, approximately 1 more minute of  
calm after that if you turn your S-Band volume up at Madrid.

SC Roger.

CAPCOM Apollo 7, Houston, 1 minute LOS Madrid,  
Canarvon at 17.

PAO This is Apollo Control, 229 hours,  
49 minutes into the mission of Apollo 7. We've just lost  
acquisition with Canary Islands and the Madrid Tracking  
Station. Our next point of contact will be Carnarvon at  
230 hours, 17 minutes. At 22950, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2301700 (CDT 12:21a) 675/1

PAO This is Apollo Control 230 hours 17 minutes into the mission of Apollo 7. We're coming up now on acquisition point of Carnarvon tracking station and we now have data at Carnarvon; let's listen in.

CAP COM 7, Houston, through Carnarvon.

SC Roger, Houston.

CAP COM Hi Donn, would just like to confirm a fuel cell load two purge.

SC Roger, that should work.

CAP COM Right, thank you. And I have a block data to pass up. Now this is a fairly brief pass here at Carnarvon, I'll get you at Honeysuckle at 24 and require S-band volume up at that time.

SC Okay. (pause) Ah, Bill.

CAP COM Rog, go.

SC Could you give me a map update, please?

CAP COM Rog, have one right here. For rev 146 GET 232 + 28 + 05, 116.8 West.

SC Roger, the time was 232 + 38 was that it?

CAP COM + 28.

SC Yes, alright, thank you.

PAO This is Apollo Control 230 hours 21 minutes into the flight of Apollo 7. We've lost acquisition at Carnarvon. We have about 2-1/2 minutes to acquire at Honeysuckle Creek so we'll just stand by. During the Carnarvon pass it was confirmed that there had been a fuel cell oxygen or O2 purge and that was about it. We'll stand by now for the pass at Honeysuckle.

CAP COM Apollo 7, Houston through Honeysuckle.

SC Roger, Houston.

CAP COM And I do have this block data ready whenever you are ready to copy.

SC Okay. Go ahead, Bill.

CAP COM Rog. Block data 147 dash 1 bravo plus 263 minus 0630 232 plus 09 plus 47 4102, 148 dash 1 alpha plus 299 minus 0645 233 plus 46 plus 42 3550, 149 dash 1 alpha plus 293 minus 0644 235 plus 25 plus 39 3075, 150 dash 1 alpha plus 237 minus 0630 237 plus 07 plus 05 2811, 151 dash 4 alpha plus 294 minus 1615 239 plus 48 plus 35 3073, 152 dash 4 alpha plus 298 minus 1615 241 plus 29 plus 11 2839. Standing by for readback.

SC Roger, can you give me that last one over please? The time ...

CAP COM Roger, 241 plus 29 plus 11.

SC Okay 147 dash 1 bravo plus 263 minus 0630 232 09 47 4102, 148 plus 299 minus 0645 233 46 42 3550, 149 plus 293 minus 0644 235 25 39 3075, 150 plus 237 minus 0630 237 07 05 2811, 151 plus 294 minus 1615 239 48 35 3073, 152

APOLLO 7 COMMENTARY, 10/20/68, GET: 2301700 (CDT 12:21a) 675/2

SC plus 298 minus 1615 241 29 11 2839.  
CAP COM Okay, readback is correct. (pause)  
Apollo 7, Houston. Coming up on LOS Honeysuckle, Redstone  
at 43.

SC Roger.  
PAO This is Apollo Control 230 hours 31 min-  
utes into the flight of Apollo 7. We have just lost acqui-  
sition at Honeysuckle. We are now anticipating Redstone  
tracking station at 230 hours 43 minutes, some 11 minutes  
from now, 12 minutes from now. At 230:31, this is Apollo  
Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 23043 (CDT 12:46) 676/1

PAO This is Apollo Control, 230 hours,  
43 minutes into the mission of Apollo 7. We're now approach-  
ing the acquisition point at the Redstone Tracking Ship.  
Let's listen in.

CAPCOM Apollo 7, Houston, through Redstone,  
standing by.

SC Roger, Houston, Apollo 7.

CAPCOM Roger. Apollo 7, Houston, opposite  
anomaly please. Apollo 7, Houston, 1 minute until LOS Red-  
stone, Antigua at 02.

SC Roger.

PAO This is Apollo Control, 230 hours,  
53 minutes into the mission of Apollo 7. We've just lost  
acquisition at the Redstone Tracking Station. We're antici-  
pating Antigua acquisition at 231 hours, 2 minutes. At  
23054 ending up the one hundred forty fifth revolution, this  
is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 231 hours, 2 minutes into the mission of Apollo 7. We are coming up in a very few seconds to acquisition point to Antigua. Let's listen in.

CAPCOM Apollo 7, Houston, through Antigua.  
Apollo 7, Houston.

SC Roger.

CAPCOM I have a couple of things to discuss here, Donn for you to put into the flight plan for flight plan update.

SC Oh okay, go ahead.

CAPCOM Right. First item we propose to dump waste water at 236 plus 50, excuse me 235 plus 50. That will be at the end of a - night pass. And this will allow plenty of time for the stuff to disperse before the next night pass. And also, we'll be timed to give us the proper quantity for reentry. Now at 235 plus 50 we'd like to dump to 40 percent waste quantity. And we would like to get pretty close to that number if possible because this is going to insure us that in the right quantity remaining at time for reentry.

SC Okay.

CAPCOM So I gave you a wrong number there. I corrected it but to make sure at 235 plus 0 dump to 40 percent.

SC Roger, I got it. At 235 plus 0 dump tape.

CAPCOM Also second item for information, we're looking at north set stars and the analysis now is favorable. We'll have the information soon and that is if the crew wants the information.

SC I see. The north set stars and we could use if we had to do a real backup alignment.

CAPCOM Affirmative.

SC (garble)

CAPCOM Don, yes that is correct. You could use them for a backup alignment. They will be visible longer but the primary reason for looking those things up was to have two stars that would be visible for a longer period of time for doing this test.

SC Oh I see. You're saying you want to use two other stars for the test.

CAPCOM We'll that's affirmative. We're proposing that or at least we're prepared to provide you with that information. Let me put it that way.

SC In coming in are we going to end up with the same - in other words when we fly back to...on our Gand C mode, that will be same as when we bring it up for the burn will it?

CAPCOM Affirmative.

SC All right. Well I don't care. It really doesn't make that much difference. We're trained on the south end stars.

CAPCOM Okay, well I had - we had understood it there was some reason to be worried about those because they wouldn't be visible long enough. These two stars that we have will be Navi and Polaris, stars 3 and 5. And they should - they will be visible for longer periods of time. That is why they went to work and got this information.

SC Oh I see.

CAPCOM They are still looking, trying to find out exactly what the periods are for the - that is the periods of visibility and then the duration of the time they will be visible.

SC Yeah, that would not be a problem. Actually, if you gave us the pitch, roll and yaw align we can just put those numbers on the IMU ball, and that ought to put .... in the right position.

CAPCOM Okay, the way I understood it was that because of the geometry of the orbit and the daylight problem they would be visible for short periods of time. However we'll just sort of hang loose on this for right now.

SC Well, Ron said something about 12 minutes that they would be visible. Twelve minutes would be plenty if you have them right in the telescope to begin with.

CAPCOM Copy.

SC That may not be enough.

CAPCOM Okay. We'll stand by. We have that information available.

SC Good. I prefer...stars, if we can, because we trained on that a little more on the ground, I think.

CAPCOM Okay, fine, request opposite omni please.

SC Okay.

PAO This is Apollo Control, 231 hours, 12 minutes into the mission of Apollo 7. We have lost acquisition. And we are now anticipating Canary Islands acquisition in some 2 and 1/2 minutes now. We'll standby. On this last pass we had definition of when to dump the waste water and that's 235 hours, 50 minutes to dump it down to 40 percent quantity. And that would be the last dump before reentry. At 23113 this is Apollo Control standing by for the Canary Islands pass.

CAPCOM Apollo 7 -

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2311400 (CDT 1:17a) 678/1

CAP COM Apollo 7, Houston, coming up on - stand  
by. (pause) Apollo 7, Houston through Canary standing by.  
(pause) Apollo 7, Houston, opposite omni please. (pause)  
Apollo 7, Houston, one minute LOS Canary, volume up at 23  
for one minute more at Madrid, Carnarvon at 50.

SC Houston, Apollo 7, Roger.

CAP COM Apollo 7, Houston, did you read.

SC Roger, Bill, I got 'cha.

CAP COM Okay, thank you.

PAO This is Apollo Control 231 hours 24 min-  
utes into the mission of Apollo 7. We've lost acquisition  
at Canary Islands. We're anticipating Carnarvon acquisition  
at 231:50. At 231:24, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2315000 (CDT 1:52a) 679/1

PAO This is Apollo Control 231 hours 50 minutes into the mission of Apollo 7. We now have acquisition at Carnarvon on revolution 146; let's listen in.

CAP COM Apollo 7, Houston, opposite omni please.

SC Roger.

CAP COM Apollo 7, Houston, through Honeysuckle, standing by. (pause) Apollo 7, Houston, one minute LOS Honeysuckle, Texas at 32.

PAO This is Apollo Control 232 hours 07 minutes into the mission of Apollo 7. We're climbing up apogee and coming into the last half of the 146th revolution of Earth. At 232 hours 07 minutes, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 232 hours, 32 minutes into the mission of Apollo 7. We have acquisition at the Texas Tracking Station. Now let's standby.

SC Houston, Apollo 7.

CAPCOM Apollo 7, Houston.

SC Hey Bill, I took a look at that South set star and those two stars and you're right - they're not much good. But then the cross went out in sight in - oh, I guess 6 to 8 minutes.

CAPCOM Roger.

SC So I think we better go with the north side if we can get them.

CAPCOM Okay, I'll start working on it right now. Apollo 7, Houston.

SC Roger, Go.

CAPCOM Right. On this procedure page 33 on the checklist, that's on this backup alinement, the two stars will be Navi, star number 3 instead of Acrux and Polaris, number 5 instead of Arria.

SC Standby and I'll get that written down here.

CAPCOM Okay, and the procedure of course will remain the same.

SC Okay, Bill I got it. That line for each now - maneuver the stars Navi number 3 on the 50 degree mark and Polaris number 5 on the R line.

CAPCOM That's correct. And of course you have all the information written in there if we can go either way now depending upon the situation. But since you made the change, we'll assume now that we are sending all of our information up for the north set stars.

SC Right, I'd like to do that.

CAPCOM Okay, Apollo 7, Houston, you're GO for 164-1.

SC Roger.

CAPCOM Apollo 7, Houston, 1 minute LOS Antigua, Canary to 50.

SC Roger.

PAO This is Apollo Control, at 232 hours, 47 minutes into the mission of Apollo 7. During this last pass we had the information passed up from CAPCOM Pogue here at the control center that Apollo 7 has a GO for 164-1 or for the completion of the mission. And now we have about a 2 minute wait for acquisition at Canary Islands. We'll standby through the Canary Islands pass for such conversation as there may be.

CAPCOM Apollo 7, Houston, through Canary. Standing by.

SC Roger, Bill.

APOLLO 7 COMMENTARY, 10/21/68, GET: 23232 (CDT 2:35

680/2

SC Houston, Apollo 7.  
CAPCOM Apollo 7, Houston, GO.  
SC Roger. I just got a fast alarm and a  
fuel cell freed light come on. However, our cockpit meter  
indicates - it indicates normal.  
CAPCOM Roger, we're looking.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/63, GET: 2325300 (CDT 2:56a) 681/1

CAP COM Apollo 7, Houston.  
SC Go.  
CAP COM Rog, we've been watching it for some time. The condenser exhaust temperature has been dropping down, there's nothing to worry about, it'll come back up as soon as you power up. Apparently this has been a slow trend they've been monitoring from the ground.  
SC Oh, I see now. Ours has dropped below the green band, I've got 155 here.  
CAP COM 155 rog.  
SC Okay, (garble) computer ... and figure it'll come back up when we power up.  
CAP COM That's affirmative  
a fuel cell three light.  
SC Roger. (pause) Houston, Apollo 7.  
CAP COM Apollo 7, Houston.  
SC Roger, we have a number three that tends to run cool and number two tends to run hot, ah, number two is carrying a little more load than the others that's on both busses. What do you people think of swapping, ah, let's put three on both busses and two on buss two only?  
CAP COM Rog, stand by. Apollo 7, Houston, we're talking that over, we'll get to you at Carnarvon.  
SC Rog.  
CAP COM Apollo 7, Houston, one minute LOS Canary, Carnarvon at 23. We'd like to have POO in ACCEPT for Carnarvon acquisition, we'll give you a state vector and a target load.  
SC Righto, I'll have it.  
CAP COM Thank you.  
PAO This is Apollo Control 232 hours 58 minutes into the mission of Apollo 7. We're losing acquisition with Canary Islands now, we'll pick up the spacecraft at Carnarvon at 233:25. During this pass we heard Astronaut Eisele indicate that the fuel cell number three master alarm light was on but all the meter readings were normal, at which time Cap Com Pogue indicated they had been watching this for some time on the ground and that the condenser exhaust temperature was coming down and it now stands at 155 degrees Fahrenheit. He also indicated that it will come back up and there's nothing to be concerned about when the fuel cell is put on the line. Eisele came back indicating that the history of the fuel cells seem to indicate that the number three cell is running cool, number one hot and number two is taking most of the load and how about swapping. Cap Com Pogue indicated that they would let him know at the Carnarvon pass. We have a GO for revolution 163, the completion of 163 revs which is the end of the mission and the

APOLLO 7 COMMENTARY, 10/21/68, GET: 2325300 (CDT 2:56) 681/2

PAO retrofire that would come up from right now would come up in 26 hours 39 minutes and some seconds. We had a report in here that at 0605 Zulu, that's Greenwich time 5 hours different from Central Daylight Time that would be 01:05 our time, a Class one bright, 1B flare, occurred on the Sun solar flare. This flare had been predicted for the last couple of days and although it was small compared to those that would expell harmful high energy protons, the situation itself does serve to illustrate how it would have been handled had it been a lunar mission that we had going on with the astronauts on their way to the Moon. The flare was observed as it occurred by the SPAN, that's Solar Particle Alert Network, observer at the Carnarvon station Australia. He placed a call into the space environment console located in the Control Center here in Houston and the information was immediately relayed to the Space Disturbance Forecast Center in Boulder, Colorado for confirmation and additional information, their inputs. The Carnarvon SPAN site followed up their voice report by transmitting via teletype here to the Control Center detailed data on the RF burst that accompanied the flare. Within a half hour after the flare was first observed, the data was being analyzed by a computer here at Houston MCC. The results of the computer analysis will show that there is no adverse radiation associated with this event, as I say it was a minor disturbance, Class 1B is not a major solar flare, so there was not adverse radiation associated with it and it was expected result for such a small one. Protons are generally present only during the very largest of solar flares. Solar flares such as this, again, would not effect the Apollo 7 Earth Orbital mission so there is no cause for concern about that. The only concern would occur during a deeper space flight such as a lunar mission, but again it does serve to indicate in this particular example how it would have been handled had this been a lunar mission. We're anticipating Carnarvon at 235:25, 233:35 a correction. At 233:03, this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 233 hours, 25 minutes into the mission of Apollo 7. We're coming up in about 10 seconds with acquisition at Canarvon. We'll standby.

CAPCOM Apollo 7, Houston, through Canarvon.

SC Roger.

CAPCOM Apollo 7, Houston, I have the maneuver pad when you're ready to copy.

SC I'm ready. Go ahead.

CAPCOM Roger. SPS number 7, 239061100 minus 00000, minus 010000, minus 02020. Don, could you go to accept please?

SC We've got it.

CAPCOM Roger. Continuing to read with noun 42, 2303 plus 0 niner 01, 02083, 24647, minus 073, minus 131, 008, 05, 2831, 276, 238, 24, 0000, minus 0 niner 42, plus 13557, 2307, ROLL pitch and YAW all 0's. Standing by for readback.

SC ...SPS burn number 7, 59061100 minus 00000, minus 010000, minus 02020, 2303 plus 0901, 02083, 24647, minus 073, minus 131, 008, 05, 2831, 276, 238, 24, 0000, minus 0942, plus 13557, 2307, all 0's.

CAPCOM Right. You faded out. Now on 42 up there for the apogee height - 2303.

SC Roger, 2303.

CAPCOM Okay. And comments SCS auto with SPS. Out of pointing north, pitched up 70 degrees. And also in the comments section I have the backup align information

SC Okay, pitched up 70 degrees what you got?

CAPCOM Affirmative. Out of plane north pitched up 70 degrees.

SC Right and heads up. ...backup.

CAPCOM Affirmative. That's right. It is heads up.

SC Go ahead and give your backup angles now Bill.

CAPCOM Right. For the backup alinement ROLL 035, pitch 003, YAW 006, comments backup aline stars are north set. Both stars available after 5 minutes in darkness.

SC Okay. ROLL 035, pitch 003, YAW 006, north set - 5 minutes after darkness.

CAPCOM Affirmative. Readback is correct.

SC I understand these are the angles that when we're in position the north set stars that we fly back to null on the GEC we'll also be at null on the INE pole.

CAPCOM That's affirmative. That's the way I understand it.

SC Okay, Bill -  
 CAPCOM Donn, before you put your pad away, would  
 you confirm in noun 42 the C - 02083.  
 SC Roger, 02083, got it.  
 CAPCOM Thank you. Readback is correct.  
 SC Okay thank you, Bill.  
 CAPCOM Okay, Donn it is your computer.  
 SC Okay.  
 CAPCOM Both ROLLS are in. Apollo 7, Houston,  
 opposite omni please. Apollo 7, Houston, coming upon  
 Carnarvon LOS, S-Band volume up at Honeysuckle which will  
 be about 1/2 minute from now.  
 SC Okay Bill.  
 CAPCOM Apollo 7, Houston, opposite omni  
 please.  
 SC (garble)  
 CAPCOM Go. Apollo 7, Houston, Go.  
 SC Donn, nothing, Bill, I just responded to  
 your call there.  
 CAPCOM I'm sorry.  
 SC M...  
 CAPCOM Apollo 7, Houston, approximately  
 1 minute LOS Honeysuckle, Guaymas at 04.  
 SC Roger.  
 PAO This is Apollo Control, 233 hours,  
 42 minutes into the mission of Apollo 7. We have lost  
 acquisition and as CAPCOM Pogue passed up to the crew. Guay-  
 mas acquisition will be at 23404. We also have a very short  
 2 and 1/2 minute contact with the Huntsville Tracking ship  
 at 23401. And evidently CAPCOM Pogue does not anticipate  
 any contact there. So we'll come upon Guaymas at 23404.  
 At 23343, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2340300 (CDT 4:07a) 683/1

PAO This is Apollo Control 234 hours 03 minutes into the mission of Apollo 7. We are coming up in just a few seconds on acquisition at Guaymas, Mexico; let's listen in.

CAP COM Apollo 7, Houston through Guaymas standing by.

SC Roger.

CAP COM Apollo 7, Houston.

SC Go.

CAP COM Hey, Donn, monitor your yaw. We show a slow drift over toward 270.

SC Rog, I'm keeping an eye on it.

CAP COM Okay.

SC I'm hoping that the pitch and yaw (garbled) won't quite get over there.

CAP COM Okay, we'll keep an eye on it here, we have a long pass.

SC Okay.

CAP COM Very good.

SC Okay, do a P-52 using (garble)  
Oh you're not reading this are you?

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 23420 (CDT 4:30) 684/1

CAPCOM Apollo 7, Houston, 1 minute LOS Antigua  
ascension Canary weather at 26.  
SC Thank you Bill. We'd like to (garble).  
CAPCOM All right.  
PAO This is Apollo Control, 234 hours,  
23 minutes into the mission. We are anticipating contact  
with the Canary Islands Tracking Station in about 2 minutes.  
So we'll standby for that pass.  
CAPCOM Apollo 7, Houston, through Canary. Stand-  
ing by.  
SC Roger.  
CAPCOM Go ahead. Apollo 7, Houston. We're  
monitoring about 75 degrees in yaw.  
SC Roger. Thanks Bill. I just caught it.  
I was hoping I could get away without firing the YAW if I  
had to.  
CAPCOM Roger.  
SC Hey Bill, we have lost down link and you  
didn't give the tape back that last time. I did the final  
line check, used Sirius and Rigel. I got 5 balls starting  
with Eperus, got plus 4 ball 8, plus C ball 24 minus 4 ball  
to 3 for the torquing angle in the final line check.  
CAPCOM What were the last two on the final  
line check?  
SC Plus 4 balls 24 and minus 4 ball to 3.  
CAPCOM Roger.  
PAO This is Apollo Control, 234 hours,  
33 minutes into the mission of Apollo 7. We're now losing  
acquisition at Canary Islands. We're anticipating Tananarive  
at 23446. At 23433, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 23447 (CDT 4:50) 685/1

PAO This is Apollo Control, 234 hours, 46 minutes into the mission of Apollo 7. We have acquired at Tananarive. We'll standby. This is Apollo Control, 234 hours, 53 minutes into the mission of Apollo 7. We had no voice contact at Tananarive. We have experienced some difficulty of communicating through Tananarive in the last day or so. We are now anticipating contact with Carnarvon at 235 hours even. At 23453, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2350000 (CDT 5:04a) 686/1

PAO This is Apollo Control 235 hours into the mission. We are acquiring very shortly Carnarvon tracking station; let's listen in.

CAP COM Apollo 7, Houston through Carnarvon.

SC Hello, 'dere.

CAP COM Hello, do you have a residual from your EMS Delta V test?

SC Nope, haven't done it yet, but I imagine it's 21.6 like it always is.

CAP COM Okay. And Donn, just for the record did you get the cannister change?

SC Negative, we'll get that.

CAP COM Okay, no sweat.

SC Good morning, Bill.

CAP COM Good morning.

SC Hey, this is Wally. I'd like to have the surgeon give us some dope on Actifed. We're not sure whether my symptoms with it are right or not but my mucous thickened up and tended to dry up a little bit. It got a lot thicker as a result of treating myself with Actifed. Does it dry up the nostrils and the sinus or does it just sort of thicken it up?

CAP COM Stand by. The surgeon is nodding his head and said that's a common response.

SC That it thickens the mucous.

CAP COM It thickens it and also maybe dry up your nose.

SC How about your sinus'? Will it dry up your sinus.

CAP COM It shrinks them down.

SC Does, eh?

CAP COM Rog.

SC Well ... make a point we're about ready to start on Actifed about every 8 hours right up to retro and just not sure if it's a smart move or not.

CAP COM It, ah, as far as the surgeon is concerned it's a recommended procedure.

SC Roger, we'll go that way.

CAP COM Okay.

SC Hey, Bill.

CAP COM Rog.

SC We've tried and tried since last night to find out how we're going to change canisters 22 times when we only started with 22 cannisters including the two in the lithium hydroxide canister.

CAP COM Okay. I originally designed that thing, I'll explain it to you later.

SC Well for change number 21 we can put

APOLLO 7 COMMENTARY, 10/21/68, GET: 2350000 (CDT 5:04a) 686/2

SC can number one back but for 22 it leaves  
me cold.  
CAP COM Okay.  
SC I think we'd better go back to the  
drawing boards for that one, Bill.  
CAP COM No comment.  
SC Our point here, Bill, is maybe we had  
better not change this one now. If we just stretch these  
out none of them have gone very far, we're left about  
1/10th of a millimeter right now. If we stretch this one  
out and move the next one back a little bit, we've got  
them through the ... I think.  
CAP COM Rog, I see what you're saying, I agree.  
SC What he's saying in 101 we should at  
least try for a silly millimeter longer.  
CAP COM Oh, boy.  
SC That's two for you.  
SC Bill, I told you to get us a new writer.  
CAP COM Thought you was setting me up there the  
other night, I'm afraid to say anything anymore.  
SC (laughing) Yeah.  
SC Hey, Bill, Happiness is package of  
bacon squares on Day 10.  
CAP COM Rog. Sounds like you have quite a few  
useful comments on the food there, I've been reading the  
notes.  
SC You ought to see what we've written.  
SC How do they spell "blacch?"  
CAP COM Check with Sparchy Schultz there. We  
think you ought to look that one up in your Funk and Wagnalls.  
SC We'll bridge the gap.  
CAP COM Apollo 7, Houston, LOS Carnarvon in one  
minute, S-band volume up at that time for Honeysuckle.  
SC Okeydoke.  
CAP COM Apollo 7, Houston, opposite omni please.  
Apollo 7, Houston, opposite omni again please.  
SC Houston Control, S-band.  
CAP COM Roger, opposite omni.  
SC Roger.  
CAP COM Apollo 7, Houston, coming up on Honey-  
suckle LOS, Hawaii at 29.  
PAO This is Apollo Control 235 hours 17 min-  
utes into the mission of Apollo 7. We've just lost acqui-  
sition at Honeysuckle. We're anticipating contact at  
Hawaii tracking station at 235 hours 29 minutes, some  
11 minutes from now, 12 minutes. At 235:18 this is Apollo  
Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 23529 (CDT 5:52) 687/1

PAO This is Apollo Control, 235 hours, 29 minutes into the mission of Apollo 7. We're coming up on the Hawaiian Tracking Station. We should have acquisition in a very few seconds.

CAPCOM Apollo 7, Houston, through Hawaii.

Standing by.

SC Aloha.

CAPCOM Apollo 7, Houston.

SC All right, go.

CAPCOM Right. By just a way of a reminder, we'd like to remind you when it is DAP control, we'd like all channels enabled and DAP loaded to fail quads ALPHA and BRAVO to save some fuel on these two quads.

SC I understand that about the DAP load. What did you say before the DAP load?

CAPCOM I said just as a reminder.

SC Okay it was only the DAP load we were aware. Thank you very much.

CAPCOM Right. Thank you.

SC Started to mention not to change - ...42 in the flight plan until about 40 hours unless CO2 partial pressure dictated that way.

CAPCOM Roger.

SC Houston, Apollo 7.

CAPCOM Apollo 7, Houston, GO.

SC Roger. You're coming in a lot better now. It's our intention not to make cannister change number 22 called out in the flight plan until about 40 hours.

CAPCOM Roger, understand.

SC And that - unless CO2 partial pressure goes up, we'll make cannister change - I guess that's 23. We will make 21 at 40 hours. We'll make cannister change 22 at about 50 hours. That will put cannister number 1 back in, cannister number 2 back in then.

CAPCOM Okay, I understand. That's okay.

SC We'll put the cannister back in we took out first whatever it was.

CAPCOM Right, I understand what you're saying.

SC Houston, Apollo 7.

CAPCOM Apollo 7, Houston, GO.

SC Roger, we're in the process of doing this backup alignment. I've gotten as far as getting as far as it should be and the lining of GET. We're now flying back to three zeroes on the ball. Let's check our air against the IMU.

CAPCOM Roger. Right.

SC Houston, Apollo 7.

CAPCOM Apollo 7, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2352900 (CDT 5:47a) 688/1

CAP COM Apollo 7, Houston.  
SC I'd like to record a comment concerning  
the optic quality of the telescope.  
CAP COM Rog.  
SC ... focus very sharply on the reticle  
pattern and on stars and so forth in the center of the  
telescope and as you get out there ... area ... it gets  
a distortion and you get some fuzziness and it makes it  
very difficult to pick up stars ... Reminds me of a cheap  
pair of binoculars that you might get at Sears on sale or  
something.  
CAP COM Rog.  
SC Houston, Apollo 7.  
CAP COM Apollo 7, Houston.  
SC Are you, your getting our ... downlink  
are you?  
CAP COM Affirmative.  
SC Okay, those numbers you see are the  
error in this procedure. Looks pretty good to me.  
CAP COM Rog. Sure does.  
SC That also includes any errors thrown  
in by the GEC push button.  
CAP COM Can't argue with that.  
SC Let's argue, to make the point a little  
plainer, the attitude set ... are also included in this  
summation of errors because all I do was set in 9 balls to  
fly the GDC error needle to null. So the bias from that is  
also included.  
CAP COM I understand.  
SC Roger. (pause) Hey Bill, do you have  
a map update for us. Ah, one that's on this rev say.  
CAP COM Stand by. We have rev 149, time is  
236 + 58 + 44, 173.9 degrees East.  
SC Roger.  
CAP COM Apollo 7, Houston. Also like to remind  
you about the waste water dump scheduled at 235 + 50.  
SC Wilco. (pause) Houston, Apollo 7.  
CAP COM Apollo 7, Houston, go.  
SC We show water dump down to 40 percent.  
I assume that 40 percent guarantee means we won't have to  
dump anymore before reentry. We can restow our attachment?  
Over.  
CAP COM Okay. That is using the figures they  
have been able to determine on the flight, that's correct.  
SC And we'll end up with how much of the  
waste water tank then at 260 hours?  
CAP COM About 90 percent.  
SC Okay.

APOLLO 7 COMMENTARY, 10/21/68, GET: 2352900 (CDT 5:47a) 688/2

CAP COM You got a little --  
SC We're going to restow this thing. This  
is going to be our last dump.  
SC What if we go an extra three hours,  
what would happen?  
CAP COM Stand by.  
SC We won't worry about that.  
SC To look at this academically, we're worried  
about a trickle flow through the urine dump, that's all.  
CAP COM Okay.  
SC ... able to make this dump and that's  
it.  
CAP COM Alright.  
SC Houston, Apollo 7.  
CAP COM Apollo 7, Houston go.  
SC Through with downlink now, do you show  
the cabin pressure holding steady? We show an O2 flow high  
on and I think it looks to me like the cabin pressure might  
be falling a little bit.  
CAP COM Cabin pressure's holding pretty constant  
here. I've been looking at it but stand by. Apollo 7,  
Houston. No, it still looks good here, you might check the  
waste vent and direct O2 valves.  
SC Rog, we are dumping water.  
CAP COM Oh, yeah, that's probably it. I'm  
reading about 46.8 percent now.  
SC Roger.  
SC Are you seeing range down there, Bill.  
CAP COM Ah, I can see quantities, I'm getting  
readouts.  
SC No, on the maneuvering range.  
CAP COM Looks like I just lost, ah, I lost part  
of my display here but I was watching them, yes.  
SC We're building up to almost 2/10ths a  
degree in percent already in yaw since the dump.  
CAP COM Yeah, I see it.  
SC Okay, let's take it out now.  
CAP COM 1/10ths of a degree in the other two  
axes.  
SC Rog.  
SC (garbled) 2/10ths of a degree per second.  
CAP COM Okay, I'm making a comment. Apollo 7,  
Houston. Coming up on LOS, Tananarive at 21.  
PAO This is Apollo Control 235 hours 59 min-  
utes into the mission of Apollo 7. We are coming up on loss  
of signal, we will acquire Tananarive at 236:21, correction,  
no that is correct 236:21. At 235:59 this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 23621 (CDT 6:24) 689/1

PAO This is Apollo Control, 236 hours,  
21 minutes into the mission of Apollo 7. We're coming upon  
acquisition with the Tananarive Tracking Station. Let's  
listen in.

CAPCOM Apollo 7, Houston, through Tananarive.  
Standing by.

SC Good morning, Houston, Apollo 7.

CAPCOM Good morning, Don.

SC Hi, Jack, how are you.

CAPCOM Fine.

SC Good.

CAPCOM Apollo 7, Houston, 1 minute LOS Tanana-  
rive, Canarvon at 36.

PAO This is Apollo Control, 236 hours,  
28 minutes into the flight of Apollo 7. We're now losing  
acquisition at Tananarive. Our next point of contact will  
be Canarvon at 23636. This is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 236 hours, 31 minutes into the mission of Apollo 7. We're coming up on Carnarvon within the next 4 plus minutes. We'll take a couple of minutes before to have a recap on the last 7 and 1/2 hours of activity. At revolution 144, 229 hours roughly at Redstone it was indicated by Apollo 7 that the telescope was working as well now as at the start of the mission. There was a dry period from 229 hours up through 230 hours with not much going on. At 230 hours - the Apollo 7 confirmed a fuel cell O2 purge, pass block data. And astronaut Pogue passed up a map update. At 231 hours, the waste water dump time of 23550 was indicated to the crew. And at that time was indicated if they would dump at 235 hours, 50 minutes down to 40 percent, that that would probably be the last waste water dump of the mission. At 232 hours, 32 minutes on the Texas pass REV 146, we passed up a GO for 164-1. That is 163 revolutions which is the complete plan for mission. So they have a GO for the complete mission as of that time. At 232 hours, 50 minutes the Canary Islands - Eisele indicated that fuel cell number 3 master alarm was on but all the meter readings seemed normal onboard. Astronaut Pogue here at the control center indicated that we had been watching this for some time. And that the condenser exhaust temperature is coming down, 155 degrees now or at that time. But it will go back up when the fuel cell is put on the line. Eisele then indicated that since number 3 fuel cell was running cool and number 1 fuel cell had a history of running hot and number 2 is taking most of the load. How about swapping it? And Pogue indicated that they would let him know at Carnarvon. At about this time we had an indication of solar flare activity and that was that - they had observed a I-B. That's a one bright classification which is a small solar flare. And although it is small compared to those that would expel harmful high energy protons, the situation served well to illustrate how it would have been handled had this been a lunar mission. The flare was observed by the SPAN. That's Solar Particle Alert Network Observer at the Carnarvon Australian Station. He placed a call into the space environment console located in the control center here in Houston. The information was immediately relayed to the space disturbance forecast center in Boulder, Colorado. And the Carnarvon span site followed up the voice report by transmitting via teletype to control center here. A detailed account and the data on the RF burst that accompanied the flare. Within 1/2 hour after the flare was first observed the data was being analyzed by a computer here in MCC. The results of the computer analysis show that there is no adverse radiation associated with this event. And this was an expected result for such a small

APOLLO 7 COMMENTARY, 10/21/68, GET: 23629 (CDT: 6:34a) 690/2

flare. So there was no danger to the flight but it served well to indicate how such flare reportage was to be handled. At 235 hours, Astronaut Schirra had questions about the actifed tablets and about the mucus - and how - he asked the question of whether actifeds thicken the mucus, and if that was normal. And the doctor here in the control center on duty indicated yes, it was normal. He then asked about sinuses and the doctor said, "Yes, they open the sinuses; they shrink the sinuses." The canister changes were then talked about. We have two more canister changes to complete the mission and that the lithium hydroxide canisters onboard and in rev 148 235 hours, 29 minutes at Hawaii, it was indicated by the Apollo 7 crew that the telescope, when it was used, the edges appeared sort of fuzzy; very difficult to observe around the edges, looking through the telescope. There was a navigation update, and the last waste water dump down to 40 percent level was performed during that pass. We are now up to the Carnarvon acquisition point; let's stand by for any live conversation.

CAPCOM Apollo 7, Houston, through Carnarvon, standing by.

SC Roger.

CAPCOM Apollo 7, opposite OMNI.

SC Tell Ed I admire his astute judgement.

CAPCOM Roger.

CAPCOM Apollo 7, opposite OMNI.

SC Roger.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCAOM Okay, Wally. As we go over the hill here, we are looking at the primary evaporator; looks a little strange. If it dries out you might shut it down and leave it shut down; we'll pick you up next time. We are about 45 seconds LOS here at Carnarvon. We do have HSK for another 4 minutes if you want to turn up S band.

SC Okay, we'll go ahead and shut it down Jack.

CAPCOM Okay. Does it look strange to you Walt?

SC Yep, I'm gonna shut it down.

CAPCOM Okay, we do not have HSK, so we'll pick you at Hawaii at 02.

SC Okay, 02.

PAO This is Apollo Control, 236 hours, 46 minutes into the mission of Apollo 7. We are losing acquisition, have lost acquisition at Carnarvon. Our next point of contact will be Hawaii Tracking Station at 23702. This is the pass on the 149th revolution, this is the pass, and I might say the final pass of the mission for television, the live television is as follows. On this revolution at

APOLLO 7 COMMENTARY, 10/21/68, GET: 23609 (CDT: 6:34a) 690/3

237 hours, 16 minutes, or 7:18 am Central Daylight Time, they will turn the television camera on at 23718, 7:20 am; our TV pass should begin with hopefully good resolution and at 7:32 am, Central Daylight Time, the pass will end. At 23648 this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 23703 (CDT 7:07a) 691/1

PAO This is Apollo Control Houston 237 hours 03 minutes into the flight of Apollo 7. The flight plan calls for an oxygen purge during this pass across the states, an oxygen fuel cell purge as well as a TV - the TV is to be turned on at 237 hours 16 minutes. We have tagged up with 7 via Hawaii. Let's catch that conversation.

CAPCOM Apollo 7, Houston through Hawaii.

SC Roger.

SC Houston, Apollo 7.

CAPCOM Go ahead.

SC Roger.

SC Houston, Apollo 7.

CAPCOM Go ahead, 7.

SC Jack, I've got one more helpful hint to offer on this backup alignment.

CAPCOM Okay, go ahead.

SC Okay. In order to prevent the optics from dripping off the shaft and trunnion angle, you said merely turn optics power off when you get it set up and they will stay right there.

CAPCOM Okay.

SC I think the point to make note of is that we are really tracing out what amounts to an optics shaft tie-up anyway. You could see it that way.

CAPCOM Okay, copy that, Wally.

SC Hey, Jack, on the primary evaporator here, I went to manual and increased for a minute and then when I watched it, it started coming back up. I went to auto again, when I noticed the setting in here was the evaporator outlet temperature about the mid-range and the steam pressure in a comparable spot. I don't see either one of them moving at all now.

CAPCOM Okay, copy that.

SC But I am going to start looking for a separate column on that.

CAPCOM All right.

CAPCOM Apollo 7, Houston.

SC Go.

CAPCOM Okay, Wally, on the primary evaporator there, the pressures and temperatures look normal to us down here on the ground. We would like to shut the evaporator down at this time and some time after the burn, we will reservice it again and then use it prior to entry.

SC Okay. You don't want to reservice it when I shut down.

CAPCOM Negative.

SC And what are you showing glycol evap out temperature?

CAPCOM 44.1.

APOLLO 7 COMMENTARY, 10/21/68, GET: 23703 (CDT 7:07a) 691/2

SC Yes, well when this is controlling, it controls down around 40.

CAPCOM Wally, it shouldn't be boiling now. Your rad-out is low and it's - you are mixing.

SC Understand.

SC If you will notice, Jack, I don't have manual control of the steam pressure valve.

CAPCOM You have gone to increase now?

SC I went to increase for about 1-1/2 minutes when I shut it out earlier, with no noticeable effect on the back pressure - the steam pressure. Subsequent to that time, it came up. When it got within a working range, I went back to auto. I just attempted to manipulate it again, with no noticeable effect on it, that's why I think there is something fishy with the back pressure control. If I secure it now as much as I can secure it and if we just let it sit here, it might end up drifting on up, like it did before. I won't reservice it until some time before reentry then.

CAPCOM Okay, we will give you a cue.

PAO This is Apollo Control. The TV pass should be a good long one. We are due to acquire at Texas at 23718 and we should lose lock, according to our charts here, at - through the Merritt Island range, actually it will be the Antigua station at 23729, 11 minutes.

SC Houston, Apollo 7.

CAPCOM Go ahead. Go ahead, Wally.

SC Roger. We are starting with ALC out, we are dark in here with floods on, is that correct?

CAPCOM If you are going to show pictures of the panel or something like that, you should put ALC in. For spot effects, then ALC should be out.

SC We have got floods around us here that are pretty bright. We will try out first, all right?

CAPCOM Okay, that is fine. And now, if it does not look like a real good picture, I'll tell you to change the position of the switch.

SC Very good.

CAPCOM Have you got a spectacular for us this morning?

SC Negative.

CAPCOM Okay.

SC We are just going to be at our duty stations.

CAPCOM All right.

PAO And the camera is on. We are beginning to see a picture. We have got about half a picture and it is clearing up now. It's - cut it up, would you, Hal? It is just possible that might be converter trouble. I don't

APOLLO 7 COMMENTARY, 10/21/68, GET: 23703 (CDT 7:07a) 691/3

PAO                   it looks like to me that is the kind  
of trouble we had before. I can see the "high atop the  
Apollo room" sign.

CAPCOM               Okay, there it is coming in. From the  
lovely Apollo room high atop everything. You might try a  
different position on the ALC switch, let's see how that  
helps.

BND OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 23719 (CDT 7:23a) 692/1

SC How is that Jack?

CAPCOM Okay, let's go back to the other position, I think you were right. Everybody out of the pool.

SC We are, this morning at our regular crew stations passing over the United States about an hour and a half before our seventh and final burn before our eighth burn tomorrow morning on retro fire. Donn Eisele is down in the lower equipment bay on a backup alignment technique. We had the platform aligned at this point before burn no. 7. I don't know whether you can note or not Jack, but I'm moving from the front of the attitude indicator down below up to the window, where we check for dawn and it should be arriving just any moment now. I think you can see the ease in motion, none of us are strapped in, we feel very comfortable where we are.

CAPCOM Roger, it's coming in very clear.

SC Roger. We will try to give each of you a closer look at our beards this morning, to prove that we have been here and we are not fans of the beard club. I will not admit to the fact that there is any grey in this beard, my hairdresser is the only one that knows.

CAPCOM Roger, we can't see the grey, you're safe.

SC Roger, I was wondering where the grey went. Well, I'm going down below now and let Donn get up on the couch, you can check his beard and his configuration for the day.

CAPCOM Let's see Donn, you want to move over to your - oh, that's it.

SC Wally's got to move the camera a little bit. You have three professional cameramen up here now, so when we get back, we expect to get our union cards. I was performing a backup alignment procedure that could be used in the event of a computer failure to get the initial platform aligned for a particular maneuver. That has been completed now. That was one of our test objectives on this flight, and it came out very good. We came within a quarter of a degree of the actual alignment that we wanted. Wally and I have been taking turns watching the eight balls over here keeping the spacecraft somewhere near the attitude we need for the burn, and a little later on we will explain it precisely. Our no. 1 cameraman is now coming down to dolly up on Walt Cunningham and his beard.

CAPCOM Wally, there appears to be a few pieces of lint on the lens. Thank you.

SC Now, we would like to give you another demonstration. (garble) at the moment that we've mentioned along about this time is the - a little bit of (garble) pressure causing the spacecraft to move at this altitude,

SC as we are near perigee, and that's what Donn's looking at on the ball right now, to stop rushing. Donn, why don't you tell them where you are now, and point out the camera over your head. Okay, we are just about due for an O2 purge. Because of the time, I'm going to go ahead and start the O2 purge. In fuel cell 1 and we have 3 fuel cells that have been running very nicely for 11 days. I've got a camera sticking in the window here, a 16 mm Maurer camera, which we have been taking (garble) photographs of the ground at various times and we are presently going to stow that. We're trying to get the cockpit clean for the burn, which is due here in a couple of hours. We keep behind our couch here, a large bag which we call a temporary stowage bag. In order to keep from taking items all the way down to where we originally got them, during the flight, we drop them in the temporary stowage bag, such as your meals, and like the camera was just done now. A rather interesting phenomena we're noting out the window, it's light now. It's very hard to tell on camera in that the details are very clean. We see about three or four different contrails from aircraft flying at different altitude, but obviously not as high as we. They show up very neatly, some people call contrails, vapor trails, they extend for hundreds of miles. I remember the one we saw, was it yesterday or the day before, over the window, Wally. Right now, we've got an interesting one below us, over the Gulf Coast. And as you look out the window towards the horizon, you can get a good view of the day air glow. There is a very interesting band of color that runs between the actual earth surface and up where the dark blue or black sky begins. It's a very pretty, very toned blue color. I'm now going to pan back across the cockpit here and I guess this will end our weekly series with this broadcast. There is our navigator. Navigator here. It's very fascinating, we're looking all over the Gulf Coast area and looking now at Lake Ponchartrain. We can see the bridge standing out very clearly. There's a slight cyclonic disturbance in the cloud structure, which is probably the great bitter end of our friend Gladys. I hope our friends in Florida, that we left not too long ago, have not suffered too much with Gladys.

PAO If you look very sharply, you can see pictures of the men's wives, just above their couches.

SC ... tomorrow, and see how everybody held out.

CAPCOM Could you move it a little closer. Let's see Donn, you want to help him out there. As the sun sinks slowly in the west.

SC This is Apollo 7 cutting out now.  
CAPCOM A very good one Wally.

APOLLO 7 COMMENTARY, 10/21/68, GET: 23719 (CDT 7:23a) 692/3

SC Time for a commercial.  
PAO That apparently brings down the curtain  
on another television performance. Here's Schirra again.  
SC ... off the Coast.  
CAPCOM Roger.  
SC Looks like it still might be dumping  
a little rain on the Cape.  
CAPCOM On - Gladys is - looks like - about north  
of Jacks.  
SC Isn't that just about off the coast of  
Jacksonville?  
CAPCOM No, Wally, Gladys is up around 40 - 40 degrees  
north.  
SC Oh, it is? We're seeing the tail end  
of it, I'm sure.  
CAPCOM Well, it looks like about, 67 degrees  
west, and 40 degrees north. That was the position at 0400 Zebra,  
this morning.  
SC Roger. How is the weather in 164 dash one  
area?  
CAPCOM Weather is real good there.  
SC Well, I think we just about getting  
warmed up to the (garble). In that case, I've got a feeling  
today, that when we come over 164 dash 1, our splash point  
that is, that we won't use the word impact.  
CAPCOM Okay Wally, I'll give you a kind of a  
hack when you pass close to us here, so you can take a look  
at it.  
SC Roger, are we working it now, or is it  
the next rev.  
CAPCOM No, the next rev., it will be way north  
of you. In just a few minutes, I'll give you a hack and it  
will be slightly north of you, that is your present position.  
SC Okay, we'll try and give you a weather  
report. I'm not really worried too much about the weather,  
as long as the ocean is nice and smooth.  
CAPCOM Understand.  
SC What we are facing up to, is this is a  
great spacecraft, but we know it's a lousy boat.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 23729 (CDT: 7:33a) 693/1

CAPCOM Okay, Wally, you are about 65 degrees west now and your latitude looks like about 24 degrees north and so that would put 164-1 about 240 miles north of your now.

SC Roger. Walt, give your report (garble)

SC Dave, I can see nothing but very widely scattered cumulus to the left for 1/10 coverage that way.

CAPCOM Thank you.

SC Do those signs come through fairly clear to you Jack?

CAPCOM They do when you get close to the camera; it was pretty clear today.

SC Okay. did you think it was (garble)

CAPCOM Well, they are there - we can't tell whether they are 3 inches long or a half inch long.

SC I'd say about a - maybe one millimeter.

Hey Jack, note that the steam pressure is very slowly creeping up here and that's long after I quit operating it, we'll have to keep an eye back there.

CAPCOM Okay; it looks fairly normal to us. It looks like it might have been a little bit dry.

SC Houston, Apollo 7.

CAPCOM Go ahead 7.

SC Roger. One of the interesting things we've noted; I don't think we have brought it to your attention here. If you recall going to a monkey cage and watching monkeys grab bars, we have the monkey cage here and grab the same place. We found ourselves in the same condition here; using our hands and feet to maneuver about, and we always hit the same traffic spot.

CAPCOM Roger.

SC It's been very acclimated to us. I think he's trying to tell you what's on 8.

CAPCOM I think we get that.

SC We're getting to before we get 3 rides with this perigee kick, we're just about (garble) again. It's gonna be kinda tight in this burn; it is right at perigee. And out of plane.

CAPCOM Yeah, that's right Wally.

SC I think that's probably the biggest surprise in the whole mission when the effects of this perigee torque. If you buck it, it can cost you dearly in fuel.

CAPCOM I guess it's kinda like the old aileron rolling the 86.

SC Very good. It's about that kind of surprise too.

CAPCOM 7, could we get your up telemetry command reset then normal?

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 23821 (CDT 8:25a) 694/1

PAO Apollo Control Houston, 238 hours, 21 minutes. During the news conference, we picked up about 1-1/2 minutes of tape, very minimum conversation at Ascension, Tananarive, and Carnarvon. We're about to lose acquisition by Carnarvon right now. We'll pick up at Guam in 6 or 7 minutes. We still have an SPS burn scheduled at 23906. Here is the tape from the stations you missed.

CAPCOM Apollo 7, Houston through Ascension standing by.  
CAPCOM Roger, copy, we're standing by.  
SC Houston, Apollo 7.  
CAPCOM Go ahead 7.  
SC Roger, what's the Ascension time.  
CAPCOM Donn, the next one coming up is 238 plus

12.  
SC Alright, thank you.  
CAPCOM Apollo 7, you're 1 minute LOS Ascension,

Tananarive in 57.

SC Roger.  
CAPCOM Apollo 7, Houston through Tananarive.  
SC Roger. Jack, we feel that things are a little more temperamental today than they have been in the last 3 or 4 days. We're going a little faster and a little higher. The (garble) indicates that the next hour and 6 minutes, we will state our activity.

CAPCOM Okay Walt, you're about 3 by here at Tananarive. Copy fuel cell 2 being a little more temperamental today than previously.

CAPCOM Houston through Carnarvon, standing by.  
SC Roger, loud and clear.  
CAPCOM You also.  
CAPCOM Apollo 7, we are about 1 minute LOS Carnarvon, we'll pick up at Guam at 25.

SC Roger. Jack on our AMS bias test for the 30 second count into the burn and the duration of the burn with .1 foot per second.

CAPCOM Roger, copy that.  
SC (garble)  
CAPCOM (garble)

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2382535 (CDT: 8:29a) 695/1

CAPCOM Apollo 7, Houston through Guam.  
SC Roger, loud and clear here.  
CAPCOM Loud and clear.  
SC Jack, would you reconfirm our Delta VC  
as 218 per second? The reason I ask is DSKY came up with  
a total velocity of 1025 and that's quite a difference.  
CAPCOM Roger; we have 208.3 on the Delta V counter.  
SC Roger; they got that. Was right. Did you  
have to (garble) Jack?  
CAPCOM Affirmative Walt.  
CAPCOM Don, we are allowing about 17 feet a sec-  
ond for tail out here on this burn.  
SC I see; we are getting more than I thought  
we would.  
CAPCOM Roger; that was a change we made into  
the tail off into the computer.  
SC Yeah.  
CAPCOM 7, we are 1 minute LOS Guam; we pick up  
Hawaii at 38.  
SC Downlink yet?  
CAPCOM Negative; we have lost downlink; we'll  
get it again at Hawaii.  
SC Star check; that's 2831 27699 and (garble)  
right on the star.  
CAPCOM Okay.  
CAPCOM Could you fade in the (garble) Don?  
SC (garble) 27699.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 23839 (CDT 8:43a) 696/1

PAO This is Apollo Control Houston at 238 hours, 39 minutes. We should acquire, just any second, by Hawaii. We did make contact at Guam, but it was simply an establishing call, a standby, and I know, no resulting conversation. We are satisfied the carriers are in the proper attitude for the burn. The burn is to take place at 239 hours, 6 minutes, and it will be burn no. 7. The duration of it will be about 8 seconds and the differential velocity expected will be 225.4 feet per second. It will be done out of plane and have little or no effect on the orbit. The result in orbit will be 90 by 239 nautical miles according to our present plans. Immediately following the burn, the crew is to have lunch. Then they're to do a sextant calibration test, I'll get an update on some more planned landing areas, should any difficulty develop. You've heard Walt Cunningham remark about all the pages in the planned landing area that he has filled. They are to do some ground photography over Mexico and South America. Still no contact, we'll just standby.

CAPCOM

Apollo 7, Houston through Hawaii.

PAO

Apollo Control here, our present orbit before the burn is 230.4 nautical miles, perigee 90.2, 230.4 - 90.2.

PAO Our oxygen supply reads 33 percent remaining and the - oxygen tank no. 1 and 33 percent is actually in oxygen tank no. 1 is 33.28 and oxygen tank no. 2 is 33.64. Here is some conversation.

CAPCOM

Tank 1 fan is off now to prevent an auto cycling during this burn.

SC

It's off.

PAO

Cabin temperature is a very comfortable 70 degrees, about the same as it is here in Houston.

PAO

The hydrogen remaining shows 18.4 percent in tank 1, tank 2 - 18.1 percent.

PAO

Spacecraft is pitch down 4 degrees, has a yaw right handed 3 degrees, 0 roll, and is maintaining that attitude quite steadily.

PAO

Fuel cell temperatures look like this, 163 on fuel cell no. 1, 191 on fuel cell no. 2, that's a little bit higher than yesterday.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 23849 (CDT 8:53a) 697/1

PAO - the fuel cell temperatures look like this: 163 on fuel cell number 1, 191 on fuel cell number 2, that is a little bit higher than yesterday. It has consistently been higher than the other two through the flight. Fuel cell number 3 is 162 degrees Farenheit.

PAO Let's make that cabin temperature 66 - 65 to 66 degrees. Those are the latest telemetry data coming to us via Guaymas.

PAO The cabin is still a rock solid 5.1 and the O2 flow rate today is .4. I think yesterday it was .27.

PAO The load sharing on the fuel cells is quite evenly distributed among the three cells, most of them are showing a 33 point something reading and it bounces back and forth on our scales here, some of them showing for a few seconds, 34, some other one perhaps 32, but these are in percentages. They show a very balanced load sharing condition, which is an important factor.

PAO Astronaut boss Deke Slayton has joined us in the Control Center this morning to watch this burn.

PAO It is just deadly quiet from the spacecraft and it is very quiet here in the Control Center.

CAPCOM 7, I'll give you a time hack in 10 minutes.

SC Okay, Jack.

PAO And this is Apollo Control. Apparently we will not have any discussion building up to it. We will come back to you just prior to the burn. At 238 hours 56 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 23901 (CDT 9:05a) 698/1

PAO This is Apollo Control Houston 239 hours 01 minute into the flight. We are just down to the final minutes before the seventh burn on this Apollo 7 mission. We have had this conversation with the crew as the spacecraft moved across the Gulf.

CAPCOM 7, I will give you a time hack in 10 minutes.

SC Okay, Jack.

CAPCOM 5, 4, 3, 2, 1, mark.

SC Looks like we are about 1/2 second off.

CAPCOM I will also give you one in 2 minutes.

SC Okay.

SC There is a lot of smoke right off Galveston down there.

CAPCOM Roger, copy.

SC Looks pretty bad.

SC (Garble) direct off.

SC One roll channel.

SC One roll channel P and B is off.

SC (garble) pitch and yaw auto.

SC (garble) pitch and yaw auto.

SC AC zero power 1 and 2, AC1 and AC2.

SC TV servo power 1 and 2.

SC Roger, servo power off.

SC Hand controller 2 armed.

SC that is armed.

SC Okay, Bill. Both fans on, give (garble) pitch 1. Start. Pitch 1 was a start. Pitch 2, yaw 1 start.

SC Yaw 1, start.

PAO - if you look at your television monitors, you can see one of the TV displays we have called up would suggest you direct your attention to the center of the chart. You will see the pitch, yaw, and roll and this is real time telemetry now coming in from the Antigua station. You can also look at the top of that chart and see the quantities remaining in quad A, B, C, and D. It reads from about 123 in quad A down to 122 in quad B. The pilots have now completed their checklists and they have gotten a 2 minute mark. That attitude is all zeros.

PAO We have got still another good 4 minutes in this pass, so we should be able to cover the burn with ease.

PAO 4, 3, 2, 1, 0. The SPS is on, GMC confirms. Getting a normal burn. SPS off.

SC (garble) a little more circuitry.

SC Roger.

APOLLO 7 COMMENTARY, 10/21/68, GET: 23901 (CDT 9:05a) 698/2

SC VF downlink.  
CAPCOM Affirm.  
SC GDC servo powers 1 and 2 off.  
SC Okay, servo power off.  
SC Direct RC is off.  
SC Direct RC is off.  
SC Hand controllers locked.  
SC Both hand controllers are locked.  
PAO Again, if you look at your quads, there  
you notice about 8 pounds of fuel used up in ullage setup.  
SC AMS residual is -17.9.  
CAPCOM Copy that.  
SC That's pretty good. Stand by.  
PAO Flight dynamics officer predicted  
16.8 and the residuals came 17.9, got a compliment for his  
ability to plan from the Flight Director.  
SC Houston, Apollo 7.  
CAPCOM Go ahead.  
SC Can you get us an RCS quantity readout  
as of this minute?  
CAPCOM Okay, Donn. I am going to be coming  
to you over Ascension with the chart readout as well as  
the flight plan update.  
SC Roger, understand.  
SC Hey, Jack, I would like to go ahead and  
open circuit fuel cell 2 and save it for the burn tomorrow.  
CAPCOM We showed it (garble) coming down now  
Wally, We are reading 190.  
SC I show 192. It peaked out at what,  
about 195?  
CAPCOM No, we showed 192 on TM here.  
SC Might just as well as burned. Looked  
like it was about 195 on my meter and you want to go ahead  
and let it run with this?  
CAPCOM Yes, we will let it run right now.  
We will see you over at Ascension. We've got about 1 min-  
ute LOS here.  
SC Okay.  
CAPCOM We will pick you up at 17 at Ascension.  
We will have a flight plan update for you then.  
PAO And that will wrap it up for this pass  
and we will pick it up at Ascension at 23917, 07 minutes  
from now. Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 23901 (CDT: 9:05a) 699/1

SC We're right up to DC; over.  
SC We feel fine. Transmission neutral.  
(garble) control power (garble)  
SC (garble) control power (garble)  
SC Roger.  
SC (garble)  
SC Negative; up G's; I meant to say that  
at rate 2.  
SC Roger; that's what it should be.  
SC Right.  
SC Direct RCS on.  
SC Direct RCS on.  
SC My manual attitude rate command.  
SC Roger; rate command (garble)  
SC And you are in that 1 rate.  
SC (garble)  
CAPCOM Okay, I'll give you mark at 2 minutes.  
CAPCOM 5, 4, 3, 2, 1 mark. T minus 2 minutes.  
Apollo 7, verify on me Bravo.  
CAPCOM Apollo 7, Houston.  
SC Yes?  
CAPCOM Roger; verify on me Bravo.  
SC That's affirm.  
CAPCOM Okay.  
SC (garble)  
CAPCOM Okay.  
SC (garble) 15.  
CAPCOM 9, 8, 7, 6, 5, 4, 3, 2, 1, 0.  
SC GPI's; gimbal's off.  
SC gimbal (garble) off.  
SC (garble) off.  
SC Delta V off  
SC Roger.  
SC Got any circuitry; over.  
SC Do you have downlink?

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 23917 (CDT: 9:20a) 700/1

PAO This is Apollo Control Houston at 239 hours,  
17 minutes into the flight. At any second we ought to hear  
from 7 by Ascension Island. Let's open the line.

CAPCOM Apollo 7, Houston through Ascension.  
CAPCOM Apollo 7, Houston through Ascension.  
CAPCOM Apollo 7, Houston through Ascension.  
SC Loud and clear Jack.  
CAPCOM Okay, that burn looked pretty good down  
here; how did it go up there?  
SC Right on the mark. It's a beauty.  
CAPCOM It looked the same way down here; I have  
this flight plan update to go over with you?  
SC Okay; will discuss.  
CAPCOM Okay, are you ready to copy this material  
in the book here?  
SC Will copy.  
CAPCOM Okay, they are mostly deletions here.  
We still want you to do the pippa bias CMS bias test which  
is scheduled at 23950.  
SC You say cancel that?  
CAPCOM No, negative. We still want you to do  
that one.  
SC We did it before the burn which is much  
more significant. Already done it.  
SC We didn't do the pippa bias, yet.  
SC Oh, you want the pippa bias?  
CAPCOM Roger.  
SC Okay, the NS bias is complete.  
CAPCOM Okay, and at 240, you'll have that  
cannister change which you have already been given; you want  
to delete the sextant calibration test. Okay, I'll be  
passing you up a state vector and a nav check along with  
the landing block date of number 26; I'll be sending you  
a state vector, and I'll be giving you the nav check.  
SC Roger.  
CAPCOM Okay, at 24030, we'll initiate a charge  
on batt B; we want to charge batt B, the lowest battery,  
to verify their repeatability of the lower than expected  
battery charging performance that we have observed. They  
have run some chamber tests out at Downey to duplicate this  
charging and we have concluded that it's a safe and useful  
thing to do which will give us some added electrical capacity.  
But even without battery B we've got sufficient electrical  
capacity for any kind of entry and stay time on the water.  
SC What kind of stay time?  
CAPCOM 18 hours.  
SC 18?  
CAPCOM Well, we got more than -

APOLLO 7 COMMENTARY, 10/21/68, GET: 23917 (CDT: 9:20a) 700/2

SC We think - suspect about 30 hours.  
SC Rough 48 -  
CAPCOM Okay, it's 18 with the hybrid reentry,  
Wally, but we have got way more than that.  
SC Okay.  
CAPCOM And coming into - everything else that  
I don't mention stays the same - you still have the photography  
and at 241 - we'll power -  
SC We are taping up H2 heaters and purge?  
CAPCOM Roger; yes, that's all done; we picked  
that up a little later, H2 heaters and the purge are cancelled,  
the G and N power down at 241. And -  
SC 241?  
CAPCOM Yeah, 241 plus 00.  
SC G and NSCS right?  
CAPCOM Right.  
SC Okay, what I need, and you might do that  
now, is get the fuel reading.  
CAPCOM Okay, I've got that for you.  
SC And if we had the fuel, I'd like to read  
the SCS up for awhile and use that fuel for photography and  
pulse both.  
CAPCOM Okay, your RCS chart value is 496 pounds  
SC Okay, it looks - let's use some of that  
fuel today; we can't use much of it tomorrow.  
CAPCOM Okay, Wally, stand by on that value here;  
I'll be giving you an updated one here. Let's go ahead and  
finish this flight plan update.  
SC Okay.  
CAPCOM At 24110, we want to delete the P23 trunnion  
bias check.  
SC Roger.  
CAPCOM And at 242, then you'll delete that power  
down.  
SC Okay, we can power down to G and N.  
CAPCOM Yeah, power down to G and N.  
SC Okay, we'll leave the SCS up for now.  
CAPCOM Okay, for that you'll have your power  
down at 241 and then we are just deleting the power down at  
242. We're just powering you down an hour earlier.  
CAPCOM You still have the window photography  
at 24 -  
SC Okay.  
CAPCOM You still have the window photography  
at 24230, and the chlorination - okay, over at 244, we want  
to delete the cryogenic stratification test.  
SC We cut out at 243 - do you want more  
chlorine?  
CAPCOM Roger; the chlorination still stands.

APOLLO 7 COMMENTARY, 10/21/68, GET: 23917 (CDT: 9:20a) 700/3

SC Okay, we are just about right on that so  
I think it would be just about to run it any other day.

CAPCOM Okay, fine.

CAPCOM Okay, coming on that next page of 244  
you'll delete the stratification test.

SC Roger.

CAPCOM Everything else on that page stays the  
same; there is an addition at 24540. That's the H2 line heaters  
on, and at 246, an H2 fuel cell purge, and you will be deleting  
the canister change at 247, and you are picking that up at 250.  
And the remainder of the flight plan looks pretty good Wally.

SC Okay, I'd like to start stowing the cockpit  
today, and I'd like to drop that humidity survey; we filled in  
the block on that anyway.

CAPCOM Okay, we'll -

SC Survey at 24520.

CAPCOM Okay, we'll let you know on that over  
Tananarive; your chart value updated is 503 and the doctors  
have come up with a recommended actified schedule to give  
you the maximum crew comfort on reentry. They are recommending  
each crewman take one tablet at 241, another tablet at 249,  
and a third one at 257, and this is, the 257 one is the most  
important.

SC Okay, got that. Jack, broadcast in the  
blind at Tananarive if we don't answer.

CAPCOM Okay, will do Wally.

SC Okay.

CAPCOM We are just about to lose you; Tananarive  
at 32.

SC Garble

PAO This is Apollo Control. That concludes  
a very talkative Ascension Island pass. And we'll see what  
happens at Tananarive in about 7 minutes. Apollo Control Houston  
at 239 hours, 25 minutes.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 23932 (CDT 9:36a) 701/1

PAO Apollo Control Houston, 239 hours, 32 minutes. Via Tananarive, we expect acquisition just any second.

PAO Apollo Control Houston here, we've got the data from that last SPS burn on fuel and on the weights of the SPS fuel and oxidizer and it goes like this. In the fuel tank just prior to the burn we had 1102 lbs. remaining. Immediately after the burn, we had 876. In oxidizer, just prior to the burn, we had 1832 lbs., immediately after the burn 1469. A rather dramatic dropoff, and this of course, remains above our red line value for that node of the orbit. Here goes Jack Swigert's first call.

CAPCOM Apollo 7, Houston through Tananarive.

SC Roger, all and clear, Jack.

CAPCOM Okay, you're about 4 by.

SC Well, very good.

SC Jack, (garble)

CAPCOM Okay, Wally, we are going to have to wait until Carnarvon to get it, we've got an 8 minute pass at Carnarvon. I got something about a tenth of a MM, but I didn't quite copy all.

SC What did you say.

CAPCOM Let's wait till Carnarvon to get your last transmission. We pick up Carnarvon at 48.

SC (garble)

CAPCOM No, Wally, we don't have any other information for you, we'll see you at Carnarvon.

SC Roger, standing by.

PAO And that obviously will wrap up the inconclusive and unreadable comm by Tananarive.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 24008 (CDT 10:12a) 702/1

PAO Apollo Control Houston here, 240 hours.  
8 minutes into the flight. From Carnarvon, we have some  
tape, we're in Guam now and we'll just bridge over and pick  
up the conversation that has developed there

SC Roger, loud and clear, Jack.  
CAPCOM Alright -  
SC Jack, I think what you heard me say is  
that we would like to check our fuel budget and use the SPS  
for about 2 revs or more, depending on how the fuel goes,  
to get some photography to finish up our films.

CAPCOM Okay, Wally, I'll be coming to you with  
some red line values and some recommendations on that.  
SC Let's do it right away, unless we're  
down that low. That will be alright, we'll use SPS to come  
down on the (garble) red line. That sounds good.

CAPCOM Okay.  
SC We buy the SPS, obviously.  
CAPCOM You're looking good.  
SC Jack, on that canister change at 240  
even, we've got pretty good canisters in there now. We're  
less than 1 MM from CO2. I think I would like to let this  
known canister run along to about 3 MM in CO2 and then go  
ahead and change it out and put back in the - our last new  
one and then we won't have to count very much on the one  
that was in there at launch.

CAPCOM Okay, Walter, I'll get back to you on  
that. Okay, Walt, on your proposal there on the canister  
changes, we concur.  
SC Thank you.  
CAPCOM Okay, Wally, you might be interested  
that your orbit now, we're tracking is now 90.0 by 231.1.  
SC Roger, do you know what we read onboard,  
230.9 by 90.0. I think.  
CAPCOM Yes, I copy that, I wrote it down.  
SC Do you read 231 even as what you are  
(garble).  
CAPCOM Negative, 231.1.  
SC Sorry, you are off by .2 miles.  
CAPCOM I'll tell Fido.  
SC Tell him to watch out, with all of this  
high calorie food, we may be as big as he is.  
CAPCOM Roger, copy that.  
SC So far, I (garble) over 200, it has  
improved since that last simulation.  
CAPCOM Good.  
SC Jack, you might send a call to the  
Pollution Control Board and have them check that smoke  
off Galveston. It looks terrible today.

APOLLO 7 COMMENTARY, 10/21/68, GET: 24008 (CDT 10:12a) 702/2

CAPCOM Okay, copy that Wally.  
CAPCOM Okay, Wally, I've got some recommendations  
for RCS fuel here.  
SC Go ahead.  
CAPCOM Okay, A and D are your best quads, B and  
C are above the dab red line, comfortable now, but I recom-  
mend that you be very sparingly when you use quads Baker  
and Charlie and so when you are maneuvering don't use more  
than 5 lbs. of RCS fuel for this - your picture taking.  
SC Roger. That's just about all we need.  
CAPCOM Okay, fine. We're recommending B and D  
roll.  
SC B and D roll. Roger. Jack, are you  
getting these (garble).  
CAPCOM If you will just wait a minute, Wally,  
we'll catch you. Okay, we're catching you now.  
SC Would you like me to read you (garble)  
balls (garble) DSKY.  
CAPCOM Roger, we'll copy that now, Donn. Just  
give us a few seconds here and we will have it all down.  
SC Okay, by the way, on the scheduled  
to the Actifed, we went to our schedule last night. about  
3 days ago and Dr. Walt Cunningham, (garble) and we were  
one bottle low in the whole schedule.  
CAPCOM Okay.  
SC So, the doctors are doing pretty well  
down there.  
CAPCOM Okay Donn, would you readout PIPA bias,  
I guess we lost the data on it.  
SC Okay Jack, the PIPA bias I got was  
X plus .09, Y is 0, Z plus .308. The bias compensation  
(garble) was loaded. It's plus 10504 plus 0 plus .07440.  
They are all very close to axis.  
CAPCOM Okay, copy that.  
SC Jack, unless I don't understand this  
EMS, what I do to get in EMS bias, is run it in Delta-V and  
AUTO for the 30 seconds prior to the burn and the duration  
of the burn. That's all, I remember, they do in flight  
anyway. If somebody has a better idea, I'll do it.  
CAPCOM Okay -  
SC (garble) using for.  
CAPCOM Okay, we copy that. Okay, we are about  
to lose you over Carnarvon. We'll pick you up at Guam on  
the hour.  
SC Roger, but of course the line and plan  
enroute.  
CAPCOM Apollo 7, Houston through Guam standing  
by.  
SC Roger.

APOLLO 7 COMMENTARY, 10/21/68, GET: 24008 (CDT 10:12a) 702/3

CAPCOM Walt, one addition to the flight plan  
is that a fuel cell 02 purge at 249 plus 30.  
SC Roger.  
CAPCOM And I've got the morning news here.  
SC Okay, we'll copy.  
CAPCOM Okay, - Apollo 7, Houston, about 30 seconds  
LOS Guam. Hawaii at 15.  
SC Right.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 24016 (CDT: 10:20a) 703/1

PAO This is Apollo Control, at 240 hours, 16 minutes. Or to say it another way, 19 hours, 22 minutes from retrofire. Deorbit, as it is called in Apollo. We have tagged up with Apollo 7 over Hawaii and here is how the conversation is going.

CAPCOM Apollo 7, Houston, through Hawaii.  
SC Roger.

CAPCOM Walt, on the primary evaporator, we would like to have you reservice it and leave it off.  
SC Roger; 2 minutes worth?  
CAPCOM Affirmative.

CAPCOM Apollo 7, Houston, we are ready to send you the nav vector, state vector update. Would you go to accept. And I have the nav check for you when you are ready to copy it.  
SC Ready to accept Jack.  
CAPCOM Okay, coming up.  
SC Go ahead with your nav.  
CAPCOM Okay, GEP 246 plus 30 plus 0000 plus 2607 plus 15014 0947.  
SC 246 30 0000 plus 2607 plus 15014 0947.  
CAPCOM Roger; that's correct.  
CAPCOM And we'll be waiting a rev to give you the block data number 26.  
SC Okay, could you give us a map update?  
CAPCOM Okay -  
SC We would like to have the present mode - or the last one that you got.  
CAPCOM Okay, stand by here.  
CAPCOM Nav check is in - state vector is in - and the computer is yours.  
CAPCOM Okay - the present orbit for a map update 239 plus 59 plus 37. Longitude 127.9 degrees east.  
SC Roger; thank you Jack.  
SC We are GO on your nav check.  
CAPCOM Copy.  
CAPCOM Apollo 7, Houston.  
SC Go ahead Jack.  
CAPCOM Roger, Walt. We are copying a little bit high on the steam pressure; did you do a normal service on primary evaporator?  
SC Negative Jack, but I got more than 2 with the water in it.  
CAPCOM About how many minutes did you put in?  
SC That was a little over 3 minutes.  
CAPCOM Okay, copy.  
CAPCOM Apollo 7, opposite OMNI.  
SC You are on A now.  
CAPCOM Okay.

APOLLO 7 COMMENTARY, 10/21/68, GET: 24016 (CDT: 10:20a) 703/2

SC Any suggestions on the water boiler?  
CAPCOM No Walt; we are still looking at massaging  
that down here.  
CAPCOM Walt, what we're doing is, we are going  
to do is, that we are comparing that primary evaporator now  
with previous couple of days data.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 24031 (CDT 10:35a) 704/1

CAPCOM Apollo 7, Houston.  
SC Go ahead, Jack.  
CAPCOM Have you initiated a battery charge on  
B yet?  
SC Just now pouring the battery relay  
(garble). /  
CAPCOM Okay, fine. We want to take a look at  
it before LOS Texas here.  
SC It's about the same thing it started at  
the other day, I think, a little over 2 amps.  
CAPCOM Okay.  
CAPCOM Hey, Wally, we are about 1 minute LOS  
Texas. We pick up Ascension at 54 for a short pass.  
SC Roger. You reading the battery charge  
burn?  
CAPCOM Showing 2.3.  
SC Roger. I'll make this a normal charge,  
down 2.4 amps.  
CAPCOM Affirmative.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET 2405250 CDT 10:55a 705/1

CAPCOM Apollo 7, Houston through Ascension.  
SC (garbled)  
CAPCOM Walt, we have a key hole effect here  
at Ascension, you're about 2 by. I can just barely make it  
out.

SC (garbled)  
CAPCOM Apollo 7, 1 minute LOS Ascension we  
pick you up at Tananarive at 08.  
SC (garbled)

END OF TAPE

PAO This is Apollo Control Houston, at 241 hours and 33 minutes and back from lunch. In the last half hour to 45 minutes since our last transmission, we've had a very brief chat with 7 at Tananarive and we're about to acquire with the ship Mercury. Let's hear the Tananarive tag first.

CAPCOM Apollo 7, Houston through Tananarive, standing by.

CAPCOM Apollo 7, Houston through Tananarive standing by.

CAPCOM Apollo 7, Houston. We're about 2 minutes LOS Tananarive. We pick up the Mercury at 34.

SC Houston, Apollo 7, out.

PAO This is Apollo Control, we have picked up at the Mercury, let's cut in there.

CAPCOM Apollo 7, Houston through the Mercury. Apollo 7, Houston.

SC Apollo 7 here.

CAPCOM Okay, Wally, just one little bit of information wanted to get from you. Is - I want to see how that crack in the MET has progressed after this last burn.

SC Looks like we have the one I described on the left side above (garble) of ours.

CAPCOM Right that's it.

SC It has already reached the bottom of the glass trellis and the top below the "H" in the word "hours" to the bottom of "tens of Hours." That goes all the way through. There are two smaller cracks that have developed above "hundreds of hours." The crack on the second side has not changed since we first observed it.

CAPCOM Okay, something you might give some thought to on entry is saving some tape out before you re-stow everything and taping this glass up so that it probably doesn't come out when you splashdown.

SC Very good.

SC Hey, Jack. This is Walt.

CAPCOM Go ahead.

SC Rog, about 45 minutes ago I turned the O2 fans 1 back on auto and ran the fans 2 for three minutes.

CAPCOM Okay, we copy that Walt. And I have a (cut off)

SC Jack, we've been trying to play a single vector for roll, and I am not sure yet what quad you want to use for that.

CAPCOM Okay, we want to save quad B, Baker and Charlie, so use quads Alpha and Delta as much as you can.

SC Do you have on the back of our schematics book the plate on the thrusters?

CAPCOM I can get it for you. You want to know

circuit breaker configuration?

SC Right we've got it on the back of our schematics book, and I tried that and it doesn't work.

CAPCOM Okay.

SC (cut off) the chart that came from the logistics training manual, Jack.

CAPCOM Okay.

SC Should be on the (garble) you have as a backup cycle.

CAPCOM Yes, I've got it here.

SC I'll have Walt call out what he told me.

SC Okay, it's probably in the front of yours.

CAPCOM Yeah, I've got it.

SC okay, we were trying to use the quad A roll, and the channel switches were in A. So, we pulled circuit breaker for A and C roll two main A. The channel switches were in A.

CAPCOM Okay.

SC That should give us A1 and A2 only, right?

CAPCOM Right. You're not using it on minimum

impulse are you?

SC Yes, you have to use minimum impulse. Vent B and D isn't it?

CAPCOM No, when you're in minimum impulse you're going to use quads Baker and Charlie.

SC B and C yeah. That's what we did.

CAPCOM Okay, then when you pull AC roll 2A, you're going to knock out quads - the roll jets in quad charlie.

SC yeah, but right now you wanted to use A and D, but whenever we're at minimum impulse we use B and C, so, it looks like we're SOL for this one.

CAPCOM Right. You'll have to go to accel command if you want to get that configuration.

SC I think we will probably stay like this at min impulse.

CAPCOM Okay.

SC Yeah, that's what (garble) is at. We'll use and A and C roll.

CAPCOM Okay.

SC The shell is pretty nice but if you bump it accidentally you - hose out quite a bit.

CAPCOM Okay, we would like you to use B and D roll. You have a little more margin on quad Baker than you do on quad Charlie, if you're going to be in minimum impulse.

PAO Apollo Control here. While he is reading up that update those of you in the News Center we would call your attention to the chart we have on your television matrix. The retrofire digitals they're down at the bottom of the chart. You'll see the GETI, ground elapsed time initiate, chart presently reads 259 hours 39 minutes, 20 seconds .01 that's your start retrofire time, the best estimate right now. If you want to make a copy of that we will leave the chart up a few minutes.

SC Since the burn, we have used 19 (garble)

CAPCOM Okay.

SC I'm working on it as fast as I can.

CAPCOM Okay, and I have your block data number 26, when you're ready to copy it Wall.

SC Go ahead I'm ready to copy.

CAPCOM 153 dash 4 alpha plus 254 minus 1610  
243 plus 11 plus 05 3069 154 dash 1 charlie dash 4 charlie  
plus 163 minus 1610 244 plus 47 plus 45 2700 155 dash alpha  
charlie minus 236 minus 0100 245 plus 22 plus 22 6914 156  
dash alpha charlie minus 139 minus 0110 246 plus 55 plus 49  
6280 157 dash alpha charlie minus 040 minus 0170 248 plus 28  
plus 57 5782 158 dash alpha charlie plus 053 minus 0250  
250 plus 02 plus 00 511

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 24143 (CDT 11:47a) 707/1

CAPCOM + 005113 end.

SC Okay, Jack. Readback follows and before that, we have just a couple minutes to go on the block read after this. If you get a chance, why don't you pass it up and we will get it out of the way. Also, we would like that block data for rev 165, over.

CAPCOM Okay, copy that.

SC Readback follows: 153 - 4 alpha + 354  
- 1610243 + 11 + 0500069154 - 4 charlie + 463 - 1610244 +  
47 + 45 -- 0155 dash alpha charlie - 336 - 0100245 + 32 +  
326914156 dash alpha charlie - 139 - 01103346 + 55 + 496280  
375 dash alpha charlie 040 - 040 - 0170248 + 28 + 575782  
358 dash alpha charlie + 053 - 0350350 + 02 + 005113, over.

CAPCOM Roger, that's correct. We are working on the remaining block data.

SC I'll give you back one block, one rev pass, then you are open.

CAPCOM Copy. We are about 50 seconds LOS Guam. Hawaii at 52.

SC Roger.

PAO And this is Apollo Control. That wraps it up via Guam, at 241 hours 45 minutes into the mission.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 24155 (CDT 11:59a) 708/1

PAO Apollo Control Houston here 241 hours  
55 minutes. We have acquisition via Hawaii. Here is the  
pass.  
CAPCOM Apollo 7, Houston through Hawaii, stand-  
ing by.  
SC Roger.  
SC Houston, Apollo 7.  
CAPCOM Go ahead, 7.  
SC Jack, I would like to give you an in-  
ventory of the film we have left, and I would like to have  
the people who are involved (garble) in the (garble) and  
the way they have them full of targets too. I don't even  
know where we are going (garble) be able to get some pictures  
for them. (Garble) exactly 38 frames of Panatomic X (garble)  
CAPCOM Okay, Wally, you faded in and out on  
that. I did copy that you got about 20 frames of Panatomic  
X left, but I didn't copy the number of frames in S0368.  
SC 25 frames in 368.  
CAPCOM 25 frames in 368 and you would like -  
as I understand it, for us to give you some desired targets  
of opportunity to photograph. Is that correct?  
SC (garble) information.  
CAPCOM Okay, we will see if we can come up  
with some desired targets as you come around on the subse-  
quent rev.  
SC We have got the film count at 15 frames  
368, 48 frames Pan X.  
CAPCOM Copy that.  
CAPCOM Apollo 7, opposite omni.  
SC (garble)  
CAPCOM Say again, 7.  
SC Roger. I think we can turn the power  
down to about half the SPS.  
CAPCOM Okay.  
CAPCOM Apollo 7, Houston. We are about 1 min-  
ute LOS Guaymas, we pick up Tananarive at 44.  
SC Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GBT: 24247 (CDT: 12:51p) 709/1

PAO This is Apollo Control at 242 hours, 47 minutes into the flight. At Tananarive we have already done a brief tag up; I don't know how much communication will result and one new time of interest has been generated this morning; we are now estimating splash time in the morning that's based on a 164-1 nominal landing point. Time of 6:11 am, Central Daylight Time - 6:11. Here is the beginning of the Tananarive pass.

CAPCOM  
standing by.

Apollo 7, Houston through Tananarive,

SC

Okay Jack.

CAPCOM

Okay - reading about 3 by Walt.

SC

Surprised that you could hear us at all

here.

CAPCOM  
some of that information on terrain photographic targets.

Roger. Coming up over Guam I'll pass you

SC

Roger; we are chlorinating now.

CAPCOM

Okay; copy that.

SC

(Garble)

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68 GET: 24318 (CDT: 1:22p) 710/1

POA Apollo Control at 243 hours, 18 minutes  
over the Ship Mercury, we had the following communication.  
CAPCOM Apollo 7, Houston, through the Mercury.  
SC Yes Jack.  
CAPCOM Okay, I have some of that information  
on photography here.  
SC Go ahead Jack.  
CAPCOM Okay, at GET of 24355, when you approach  
the West Coast of South America, you can shoot the 368, FO368  
water to land - at 24401 on the East Coast of South America,  
you can shoot the SO368 land to water, and if you feel like  
you want to finish it up this pass, Wally, or do you want  
to continue on to the next rev?  
SC We'll go on this rev.  
CAPCOM Okay - I'll try to give you some times  
on the - well, in the next rev, you'll hit the West Coast of  
South America about 24532. And the East Coast about 24537.  
And if it's hazy, don't shoot the 368 film, and we'll give  
you some more targets later on.  
SC We hear you.  
CAPCOM Okay, on the panex, they are requesting  
on this rev here - on that 24532, a strip exposure, 1 exposure  
every 10 seconds from 24532 until 24537, all the way from  
across the South America to the water. And use the red filter  
on the panex film.  
SC Is that for weather targets?  
CAPCOM Okay - for the strip photography of the  
land, it's not really weather.  
SC You want red only and not red and green.  
Is that right?  
CAPCOM No, red only.  
SC Okay.  
SC Jack, you still listening?  
CAPCOM Go ahead.  
SC I've got the SO368 at 24355, I think you  
could (garble) at 24401.  
CAPCOM Okay - you'll hit the West Coast of South  
America at 24355 and you could take some pictures there, water  
to land - and then at 24401, that's what time you'll hit  
the East Coast of South America and could take some SO 368  
land to water. Did I confuse you?  
CAPCOM Opposite OMNI, 7.  
CAPCOM Apollo 7, we are 1 minute LOS Guam; we  
pick up Hawaii at 27.

END OF TAPE

PAO This is Apollo Control Houston here at 244 hours, 11 minutes into the flight. And we are 15 hours, 27 minutes away from retrofire and the only item, two items now, on our flight plan that are very significant, one reads, "Initiate deorbit storage." Command Module Pilot Don Eisele is well along into the sleep period, and about an hour from now the crew will do a ECS redundant component check, and take a careful look at their environmental control system. Some minutes ago we had a conversation with the crew over Hawaii. Deke Slayton discussed the helmet suit configuration for reentry with the crew. We have that tape and let's listen now.

CAPCOM Hawaii AOS.  
CAPCOM Hawaii, Houston, do we have AOS yet?  
HAW Affirm.  
CAPCOM Apollo 7, Houston.  
SC Go ahead.  
CAPCOM How's it going?  
SC Roger; loud and clear.  
CAPCOM Roger. Got some late data for you here.

Let me read it off.

SC Just a second here; I'm just cleaning up - we just took some movies of Walt getting in his suit.

CAPCOM Stand by 1.

SC Roger.

SC Okay, go ahead.

CAPCOM Roger; okay. I'd like to give you some data here on landing without helmets. Number 1: We don't have any. Number 2: We are expecting X axis acceleration of 7.8 which to give you a reference is twice - little over twice what we had in Gemini, which was 3.4. Number 3: There is about a 30 percent probability, there again it is a function of winds and waves actions, that you can get a tripping action or a rotation on impact of about 200 degrees a second. The concern here is that you are probably going to get some head impact with either the headrest, the struts, the girth ring or anything else that happens to be in the general area. In summary, we are concerned about getting some head damage if you impact without the helmet on. I think on the other hand, we have some data that shows that you can impact without the helmet attached to the neck ring, and have reasonable protection; this has been done on a couple of sled tests. So our recommendation is that you come in with the gloves off, try to have the helmet in the vicinity of your head at least, probably on it; this you are going to have to check out and see whether you can't reach up there and clear your ears by reaching your fingers in between the neck ring and the helmet. And ideally of course you'd attach the helmet to the neck ring say around 2K before

APOLLO 7 COMMENTARY, 10/21/68, GET: 24411 (CDT: 2:15p) 711/2

landing, or if you can't do that, the next best thing is to have it on your head. You got all that?

SC Yeah. We've fitted up our couches pretty well with the way our heads pretty well constrained - with food bags and tape, just to get our buffer. This is about all you can do with that. The helmet is - or our problem is - if we have to blow our nose - it's not just a case of clearing our nose, we are filled up with mucus and we feel when they put some G on us, our sinuses are going to drain as well. We just are going to have to play that one out, I guess, Deke, and if it gets bad, throw the helmet down.

SLAYTON Okay - that's probably true. I think you ought to start in with the helmet in any case -

SC We are pretty well convinced we will pop our ears.

SLAYTON Roger; okay. I think you understand the problem - you remember Gemini 3, where we ended up with a broken visor on Gus - and we may have a few other things like this on this one - we really aren't that smart about yet.

SC Understand.

SLAYTON We'd hate to ruin that pretty profile on the landing.

SC Laughter. Okay, well, give us - we understand the problem and I think that's all we can do with it. And we'll work on it any way we can. Sure appreciate people working on it for us.

SLAYTON Okay - so you are going to try to come in with them on, and crack them, so that'll solve it, try to clear your nose then on the way down, right?

SC Roger. It's really the case of solving (garble) It's trying to blow our nose; we feel we are going to be coughing and possibly the stuff going in our throats when you put G on. I'm still blowing my nose right now and I am two actified down the road.

CAPCOM Roger.

SC And all we see there together - if we can blow our noses inside the helmet, that's going to be tricky. We'll have to play with it, I guess. We'll try it out a little bit early.

CAPCOM Okay, fine.

SC Roger; thanks to you.

CAPCOM Apollo 7, Houston.

CAPCOM Apollo 7, Houston. 1 minute LOS Huntsville; Tananarive at 244 plus 20.

SC Roger; read you - Huntsville is flying. Bring Deke up again.

CAPCOM They were down below Wally and they are

APOLLO 7 COMMENTARY, 10/21/68, GET: 24411 (CDT: 2:15p) 711/3

on their way back now.

SC Okay.

CAPCOM They were - Okay, Walt, we copy a battery charging up .41 so you can turn the battery charger off. Now at any time.

SC Say again Jack.

CAPCOM See you at Tananarive.

CAPCOM Wally, you can turn the battery charger off on batt B

SC Okay.

FLIGHT Huntsville LOS; Apollo 7 did not copy your last transmission.

PAO This is Apollo Control Houston. In the discussion you heard Deke Slayton reference a Gemini 3 incident. That was when John Young and Gus Grissom reentering the earth's atmosphere on their parachute, and the Gemini parachute, and when it went to 2 point suspension, which was the landing mode for Gemini, the spacecraft popped - moved violently, and the crew, the crew and the engineers planning the mission hadn't anticipated the violence of the movement, and the result was that Gus' head banged forward and hit the window on his side, the commander's side of the spacecraft, and cracked his visor. It didn't do any damage to Gus' person, but it did, it was an unexpected jolt and it was a severe one. Other Gemini pilots took a lesson from that and made sure their heads were restrained and that was the - that's the background on the Gemini reference in that conversation. At 244 hours, 18 minutes into the flight, this is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 22427 (CDT 2:31p) 712/1

PAO This is Mission Control Houston 244  
hours 27 minutes. At Tananarive, we tagged up with the space-  
craft and this is how it went.

CAPCOM Apollo 7, Houston through Tananarive.

CAPCOM Apollo 7, Houston through Tananarive.

CAPCOM Apollo 7, Houston through Tananarive.

SC Roger, loud and clear.

CAPCOM Roger, you are loud and clear also.

SC (garble)

CAPCOM Wally, for a point of information, we  
are assuming that stowage will be nominal for retrofire.  
If you have any items that are stowed non-nominally, would you  
let us know for CG purposes. We would like to calculate  
CG rather closely.

SC Understand (garble).

CAPCOM Okay. Comm is not the best here, you  
can give us a report over the Mercury on that subject. We  
will hit the Mercury at 44. Apollo 7, Houston, 1 minute  
LOS Tananarive.

BND OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 24444 (CDT 2:48p) 713/1

PAO This is Apollo Control at 244 hours, 44 minutes. Apollo 7, being acquired at the tracking ship Mercury. We'll standby for this pass.

CAPCOM Apollo 7, Houston through Mercury standing by.

SC Roger, standby, we're working on our picture.

CAPCOM Roger.

SC Good morning. The (garble) component check is complete, except for the beam lights. I may get those over Hawaii, we're waiting for sunrise here.

CAPCOM Roger.

SC Yeh, Ron I'm assuming you are recording down there. We're watching the sunrise come up. We're going to film it with SA 1,000 film. At first we saw some - kind of a lightish gray with hardly any color, and then a very light blue, which turned into a little darker, like maybe a magenta. That blue at 1.8 degrees (garble), we're starting to get the orange now, and it's just about light enough out there, where we can catch the power from the far horizon, maybe a hundred miles away being in profile, and I'm going to have to let them in here the second start filming the camera.

CAPCOM Roger, we have it recorded.

SC After the blue layers which had various layers within it's self. The light and dark alternating, we got our layer of yellow which is almost white, and then went on into an orange. At first it's a fairly dull orange, and then it's getting very bright.

CAPCOM Roger.

SC Yeh, Ron, we ran out of film just as the sun broke the horizon.

CAPCOM Yeh, yeh.

SC This is really work, Ron, I'm burning a light meter and a hole in the spacecraft.

CAPCOM Roger.

SC We went all the way from a 50th of a second at 2 moving on up while the sun was rising till we had a F22 and 1250, and I hope it turns out.

CAPCOM Roger.

SC We have so far 160 pulses. Of course I estimated about 3 pounds.

CAPCOM Roger, LOS

PAO Apollo Control at 244 hours 52 minutes. Mercury has LOS. Walt Cunningham describing a colorful sunrise during this pass, and rather extensive photography of that sunrise. Hawaii will acquire next at 245 hours 3 minutes. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 24503 (CDT 3:05p) 714/1

PAO This is Apollo control at 245 hours  
03 minutes, Apollo is within range at Hawaii.  
CAPCOM Apollo 7, Houston, through Hawaii.  
SC Loud and clear.  
CAPCOM Roger, the same.  
SC Ron, can we have the O2 manifold pressure.  
CAPCOM Roger, 103.  
SC Roger, switching.  
CAPCOM 104 now.  
SC We'd better double check it though.  
CAPCOM Roger.  
SC I guess you heard they changed the word  
landing to crash.  
CAPCOM Roger. - Apollo 7, Houston, 30 seconds  
LOS, Redstone at 19 and we still show secondary coolant loop  
in operation.  
SC Just the pump.  
CAPCOM Concur.  
PAO This is Apollo control 245 hours 09  
minutes into the mission, Hawaii has LOS now. During this  
pass we completed another of the daily environmental control  
system redundant component checks. Next station to acquire  
is the tracking ship Redstone at 245 hours 19 minutes.  
This is mission control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2452000 (CDT 3:25p)715/1

DEAD AIR.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2460800 (CDT 4:10p) 716/1

PAO This is Apollo Control at 246 hours  
08 minutes into the mission. During the news conference,  
Apollo 7 touched base at the Redstone and at Ascension.  
There was no conversation at Redstone other than an acknow-  
ledgment that we were standing by. There was a brief con-  
versation at Ascension. Wally Schirra reported that he has  
powered down the SCS stabilization and control system. We'll  
bring you that tape now.

CAPCOM Apollo 7 Houston through Ascension  
standing by.

SC This is Apollo 7.  
CAPCOM You can go.  
SC Roger. We shut down the SCS system at  
approximately 38 minutes at the hour, and copy that at zero.  
CAPCOM Apollo 7 Houston, say that again.  
SC Roger. We shut down at 245 hours 38 min-

utes for an SCS.

CAPCOM Roger.  
SC this was at zero.  
CAPCOM Roger, copy.  
SC That's about 4 pounds as we figure it,

and that leaves us better than 45 on re-entry (garble)

CAPCOM Roger, copy.  
CAPCOM 7 Houston, your surge of power was

observed that time.

SC Roger, check. It's like hell when you  
drive with an (garble) feeling.

CAPCOM (Laughs)  
CAPCOM 7 Houston, opposite OMNI.

SC Roger.  
CAPCOM Apollo 7 Houston, 30 seconds LOS. Mercury

at 20.

SC Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 24620 (CDT 4:25p) 717/1

PAO This is Apollo control at 246 hours  
20 minutes into the mission. Apollo 7 will be coming out  
of the night side into sunrise again as it is acquired at  
Mercury. Mercury has acquisition, we'll stand by for a call.

CAPCOM Apollo 7, Houston, through Mercury,  
standing by.

SC Loud and clear.

CAPCOM Roger,

SC Hey, Ron, I've got two questions I'd  
like to have answered for me, when you can get it.

CAPCOM Roger, go.

SC One has to do with the fuel cells.

We're presently planning to power up tomorrow morning  
somewhere in the 254 hour. And so Donn can get some align-  
ment out of the way, before we get up, and fuel cells (garble)  
has been going to (garble) a little faster each day and  
when I get up it looks like it's climbing at a fairly healthy  
rate, I'd like to open circuit fuel cell 2 and put it back  
on the line at about T minus 45 minutes or T minus 39, that's  
the first point. The other one is on the primary evaporator  
I overserviced that today and I guess we don't know exactly  
how much water I got in it, it was on for more than 3 minutes  
though. And I wanted to know are we planning on bringing  
the primary evaporator back on the line or not and I  
suspect as how you just as well not do it, and I'd like to  
just go ahead and (garble), radiator bypass and cut the C  
circuit on the secondary component.

CAPCOM Roger, say the last on your primary  
evaporator, after are we planning to use, everything after  
that.

SC Okay, the details are down there all  
ready on - I overserviced the evaporator, I just thought I'd  
prefer to do, (garble) as many possible columns of the steam  
duct, I would like to just go ahead with that. And second-  
ary coolant leak with the radiator by pass (garble) secondary  
coolant leak and run a primary loop just on radiators.

CAPCOM Roger, copy your comments, will advise.

SC Okay.

SC I checked all the command module  
ICF engine heads about an hour ago, they're all ready at  
high loads, we don't plan on using the command module ICF  
engines.

CAPCOM Roger, we concur on our CS engine heaters.  
That is it's not necessary to heat.

SC Roger.

CAPCOM Apollo 7, Houston, opposite OMNI.

SC Hey, Ron, if you're still there, can you  
give me my present battery status, we did a charge on battery

APOLLO 7 COMMENTARY, 10/21/68, GET: 24620 (CDT 4:25p) 717/2

SC 2 today, battery B.

CAPCOM Roger, we're working on it now, we'll  
get it up to you, probably over Redstone.

SC Rog, thanks.

PAO This is Apollo control at 246 hours  
28 minutes, Mercury has LOS. During this pass Walt  
Cunningham had a couple of questions, one concerning the  
operations of fuel cell 2 tomorrow, the other concerning  
the possibility of taking the primary evaporator off the  
line tomorrow, using radiators only on that loop and  
activating the secondary coolant loop. We hope to have  
the answer to his question over the Redstone. The Redstone  
acquires at 246 hours 52 minutes. This is mission control,  
Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2465200 (CDT 4:55p) 718/1

PAO This is Apollo Control at 246 hours  
52 minutes into the mission. Apollo 7 nearing the end of  
its 155th revolution. About to be acquired at the tracking  
ship Redstone. We'll stand by for a call.

CAPCOM Apollo 7 Houston through Redstone, standing  
by.

SC Roger, Ron.

CAPCOM We're checking all angles of which you  
called down. No answers yet.

SC Roger, thank you (too much static to be  
heard)

CAPCOM Say it again, Walt.

SC Roger. I knew you guys would (garble) that.

CAPCOM Roger.

CAPCOM Apollo 7 Houston, opposite OMNI.

CAPCOM Apollo 7 Houston, 30 seconds LOS. Ascension  
at 18.

SC Roger, Ron.

PAO Apollo Control at 247 hours 01 minute.  
Redstone has LOS. Apollo 7 will enter the night side of the  
156th revolution about 5 minutes before acquisition at Ascen-  
sion. Wally Schirra and Walt Cunningham will be in the middle  
of their dinner hour at Ascension. Due to acquire there at  
247 hours 18 minutes. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2471700 (CDT 5:20p) 719/1

PAO This is Apollo Control at 247 hours  
17 minutes. Ascension has acquired Apollo 7.  
CAPCOM Apollo 7 Houston through Ascension, stand-  
ing by.  
SC Roger, loud and clear.  
CAPCOM And 7 Houston, I have your battery status  
if you desire,  
SC Go ahead.  
CAPCOM Roger, Bat A 26.26, Bat B 26.31, Bat  
charlie 39.5.  
SC You mean after we did that charge this  
afternoon on Bat B, it's still now only 26 hours?  
CAPCOM That's affirmative.  
SC Okay, thank you.  
CAPCOM You might say we're (garble) chargers.  
SC Rog.  
SC Say, Ron, would you give me 35 clicks of the water  
pistol over the last 4 hours.  
CAPCOM WILCO.  
CAPCOM 7 Houston, the Chronicle refers to the  
majestic Apollo 7 flying machine. And they say Apollo is  
winding up the loose ends.  
SC Winding up what?  
CAPCOM The loose ends.  
SC Winding up what, again?  
CAPCOM Roger. The headlines say the Apollo is  
winding up the loose ends. E N D S.  
SC We think it's a magnificent flying machine,  
too, Ron.  
CAPCOM Roger.  
SC But as far as the loose ends part, I think  
we're kinda caught.  
CAPCOM Good.  
SC We just found out today we're not on a  
landing craft.  
CAPCOM No comment.  
CAPCOM It looks like the wives' pictures made  
the paper tonight, too. They were out at the Astrodome watching  
the Oilers' game last night.  
SC Yeah, I guess they would. Jo's a complete  
fan of that outfit.  
CAPCOM Yeah.  
CAPCOM About 30 seconds to LOS. Mercury at 56.  
SC Rog. Ron. We'll be fading out and let  
Donn carry on the rest of the evening.  
CAPCOM Roger.  
SC We've had a pretty good day.  
CAPCOM We concur. I'll see you down at the Cape.  
SC Rog. Ron, thanks a lot,

APOLLO 7 COMMENTARY, 10/21/68, GET: 2471700 (CDT 5:20p) 719/2

PAO Apollo Control at 247 hours 28 minutes.  
LOS at Ascension. Wally Schirra and Walt Cunningham prepar-  
ing for bed very shortly. Their sleep period due to start  
248 hours, just after acquisition at the Mercury. Donn Eisele  
should be up when we contact Apollo 7 next at the Mercury.  
Acquisition time there 247 hours 56 minutes. This is Mission  
Control Houston.

END OF TAPE

APOLLO7 COMMENTARY, 10/21/68, GET: 2475600, (CDT 6:00p)720/1

PAO This is Apollo Control at 247 hours, 56 minutes into the mission. The tracking ship Mercury is just acquired. Guam has overlapping coverage on this rev.

CAPCOM Apollo 7 Houston through Mercury, standing by.

SC Roger, Ron, loud and clear up here.

CAPCOM Roger, loud and clear.

SC Good show on that team. Like to speak to flight, if I may.

CAPCOM Roger.

FLIGHT DIR Apollo 7, Houston Flight, how do you read?

SC FLIGHT, Apollo 7.

FLIGHT DIR Apollo 7, Houston Flight, how do you read?

SC Loud and clear, Gene.

FLIGHT DIR Right, how're doing, Wally?

SC Very good, I want to thank you and your team for an outstanding job, it was a very professional show and we've have really enjoyed it.

FLIGHT DIR Okay, thank you very much, Wally.

SC Walt, would you like to say a word?

CUNNINGHAM Say, Gene, thanks a million. It wouldn't have been such a great flight without the great department we had down there. We have a magnificent time machine up here but we wouldn't have been going this far without you guys.

FLIGHT DIR Okay, we'll be seeing you.

EISELE This is Donn, that goes for me, too, Gene.

FLIGHT DIR Okay, Donn

EISELE Very big help for the whole

FLIGHT DIR See you later now, Donn.

EISELE Staying right in there with them.

FLIGHT DIR Rog.

SCHIRRA We'll see you cats back in the big "H" and turn some more beer up.

FLIGHT DIR Okay

CAPCOM Apollo 7 Houston, opposite omni

SC Hello Houston, Apollo 7.

CAPCOM Houston, go.

SC About six clicks from the water gun for Walt.

CAPCOM Wilco

SC And with ten for Wally.

CAPCOM Roger

SC And make it about 20 for me over the last three hours.

APOLLO COMMENTARY, 10/21/68, GET: 2475600 (CDT 6:00p)720/2

CAPCOM Will do.  
SC Ron, incidentally I haven't been keeping a very good check on that water consumption for the last few days, if the doctor's concerned about it tell him not to worry about it, I've been drinking plenty, I just haven't got it all logged in.

CAPCOM Rog, I understand.  
PAO This is Apollo Control, 248 hours, 8 minutes into the mission. Guam has LOS. During this pass before beginning their period, Wally Schirra and Walt Cunningham had a discussion with Gene Kranz, the Flight Director on this team.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 24808 (CDT 615p) 721/1

PAO                    the last shift of the Kranz team in Apollo 7, each of the crewmen expressed their appreciation to him for the support of this team. Donn Eisele is awake now. He's getting his breakfast. Next station to acquire will be the tracking ship Redstone in the south Pacific at 248 hours 27 minutes. This is mission control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2482700 (CDT 6:30p) 722/1

PAO This is Apollo Control at 248 hours  
27 minutes. Apollo 7 in acquisition at the Redstone now.  
We'll stand by for a call.

CAPCOM Apollo 7 Houston through Redstone.  
SC Roger, Houston, Apollo 7.  
CAPCOM Roger. Loud and clear. Standing by.  
SC Say, Ron, we've still got a little  
(garble) up here on (garble) and I was wondering if you guys  
would give me 3 or 4 pounds of (garble) so I could go ahead  
and use it up during the next 2 or three revs. 3 or 4 pounds  
of RCS fuel, that is.

CAPCOM Roger, stand by. Little garbled there.  
I understand you want 3 or 4 pounds of RCS fuel to use.  
SC Yeah, see (Too much static to understand).  
CAPCOM 7 Houston, opposite OMNI.  
SC Roger.  
CAPCOM 7 Houston. How's the voice now?  
SC Say it again.  
CAPCOM Roger, loud and clear now Donn, if you  
can repeat what you were saying.  
SC Oh Roger. I was asking for an RCS fuel  
quantity reading for our chart, and also asked - negotiating  
for a few pounds of attitude fuel so I can finish off our  
camera film.

CAPCOM Rog. I understand. Stand by on both  
counts.  
SC While you're at it, maybe you can dream  
up some or work up some targeting for pictures.  
CAPCOM Donn, we'll see you at Mercury next rev  
and we'll have the answers available for both counts at that time.  
SC Roger. Say it again, Walt, uh, Ron.  
CAPCOM Roger. We'll give you the answers to  
both questions at Mercury on the next rev.  
SC Okay.  
CAPCOM But it looks favorable at this time.  
SC Okay.  
SC Oh, Ron, I'll give you a film inventory.  
We have a few frames of Hasselblad color film 368 and a  
couple of magazines of 16 mm for the Maurer camera.

CAPCOM Roger.  
SC I'd like to shoot those out the window  
at either targets of opportunity or any particular targets  
that you might be able to give me. That is, you know, at  
a time when we're going over a particular item of interest.

CAPCOM Roger.  
SC And we'll furnish Panatomic-X list.  
CAPCOM Check.  
SC I think we've got about 25 frames of  
Pan-X and, oh I don't know, 6 or 8 of 368 and I'd say 2 rolls

APOLLO 7 COMMENTARY, 10/21/68, GET: 2482700 (CDT 6:30p) 722/2

SC of camera of M film.  
CAPCOM Roger.  
SC Oh, and while you're at it could get me  
a map update also.  
CAPCOM Wilco.  
CAPCOM 7 Houston. I have your map update.  
SC Roger.  
CAPCOM Rev 156 at 247 plus 30 plus 38, longitude  
12.5 east.  
SC Roger, would you say it again, my earpiece  
came out while you were talking?  
CAPCOM Roger. Rev 256 GET 247 plus 30 plus 38,  
longitude 12.5 east.  
SC Okay, thank you.  
CAPCOM Roger.  
CAPCOM Apollo 7 Houston. The United States has  
a total of 55 Olympic medals and 24 of these are gold.  
SC Pretty good.  
CAPCOM Roger.  
CAPCOM 7 Houston, 30 seconds LOS. Ascension at  
53.  
SC Roger.  
PAO Apollo Control at 248 hours 37 minutes.  
Redstone has LOS now. During this pass, Donn Eisele asked  
for permission to spend a few pounds of RCS propellant for  
photographic purposes. He'd like to use up as much of the  
unexposed film as possible, during his watch, and he asked  
us for some suggestions on areas to photograph. As you heard,  
we will pass this information up to him over the Mercury  
during the next pass at that station. Apollo 7 about to  
enter its 137th revolution. Ascension will be the first  
station on that rev. We'll acquire at 248 hours 53 minutes.  
This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/20/68, GET: 2484400 (CDT 6:45p) 723/1

PAO                      This is Apollo Control at 248 hours  
44 minutes. A decision has been made not to move the primary  
landing area 164 dash 1. The area will not be moved. Areas  
164 dash 1 will remain at these coordinates 27 minutes  
38 degrees - 27 degrees 38 minutes north latitude, 64 degrees  
10 minutes west longitude. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2485300 (CDT 6:55p) 724/1

PAO This is Apollo Control at 248 hours  
53 minutes into the mission. Apollo 7 coming up on Ascension  
now.

CAPCOM Apollo 7, Houston through Ascension,  
standing by.

SC Roger, Houston, Apollo 7.

CAPCOM Roger, I have your RCS quantities if you  
want.

SC Okay, Ron, go ahead.

CAPCOM Roger, at 248 hours you have a total for  
your profile of 503 pounds. And I have your red lines if  
you desire those.

SC Okay, go ahead with all of them then.

CAPCOM Roger, SCS redline 533, DAT redline 458,  
and your hybrid 234.

SC Okay, 503 remaining, 533 SCS, 458 DAT,

234 hybrid.

CAPCOM Affirmative. And 7, Houston I have block  
data 27 whenever you want it.

SC Okay, I can take it right now.

CAPCOM Roger. 159 dash Alpha-Charlie plus 140  
minus 0330 251 plus 35 plus 18 4565 160 dash 2-Alpha plus 260  
minus 0265 253 plus 13 plus 19 3625 161 dash 1-Bravo plus 218  
minus 0620 254 plus 39 plus 51 4011 162 dash 1-Alpha plus 278  
minus 0642 256 plus 16 plus 31 3446 163 dash 1-Alpha plus 300  
minus - 7, Houston opposite OMNI.

SC Roger. You got it.

CAPCOM Roger, on area 163 longitude minus 0645  
257 plus 55 plus 28 3007 164 dash 1-Alpha plus 277 minus 0642  
259 plus 39 plus 18 3322 165 dash 1-Bravo plus 217 minus 0670  
261 plus 16 plus 45 3151, over.

SC Okay, 159 Alpha-Charlie plus 140 minus 0330  
251 35 18 4565 160 dash 2-Alpha plus 260 minus 0265 253 13 19  
3625 161 dash 1-Bravo plus 218 minus 0620 254 39 51 4011 162  
dash 1-Alpha plus 278 minus 0642 256 16 31 3446 163 dash  
1-Alpha plus 300 minus 0645 257 55 28 3007 164 dash 1-Alpha  
plus 277 minus 0642 259 39 18 3322 165 dash 1-Bravo plus 217  
minus 0670 261 16 45 3151.

CAPCOM 7, Houston, you read back correct. We'll  
have them for the next 10 revs later.

SC Roger, I thought I was done.

CAPCOM 7, Houston. We're wondering about the  
decongestant that you're taking here about this time.

SC Oh, roger, I forgot to log that in.

Both Walt and Wally each had an actified about 248 30, and I  
took one at 249.

CAPCOM Roger.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 24903 (CDT 705p) 725/1

CAPCOM 7, Houston, 30 seconds LOS Mercury at 32.  
And do you show an 02 purge at 30.

SC Roger, I do.

CAPCOM Roger, thank you.

PAO Apollo control at 249 hours 04 minutes,  
Ascension has LOS. During this pass we gave Donn Eisele his  
RCS propellant quantities remaining, 553 pounds. We updated  
him with reentry information for each of the remaining revs  
and the (garble) and he advised us that all three crewmen  
had taken the decongestant tablet on schedule. Next station  
to acquire will be the tracking ship Mercury at 249 hours  
32 minutes. This is mission control, Houston.

END OF TAPE

APOLLO COMMENTARY, 10/21/68, GET: 2493200 (CDT 7:25p) 726/1

PA: This is Apollo Control at 249 hours  
32 minutes. Apollo 7 coming up on the Mercury. Guam has  
overlapping coverage.  
CAPCOM Apollo 7, Houston through Mercury standing  
by.  
SC Roger, Apollo 7 here.  
CAPCOM Roger.  
SC Fuel cell purge is complete, Ron.  
CAPCOM Roger. And I've got a couple of updates  
for your SO 368 and the PAN-X.  
SC Okay, go ahead.  
CAPCOM Roger, at 251 plus 15 we have some cloud  
formations over New Guinea, and they're on track. Be good  
for SO 368 film.  
SC Okay, we'll do. (garbled)  
CAPCOM Opposite OMNI, then say again.  
SC Roger, what do you say about using a  
little RCS fuel to turn these ends so we can get some pictures.  
CAPCOM Rog, we're checking on it now. And I  
have a - at 252 plus 39 we have a S-V target number 34. It  
will be north of track, use PAN-X with red filter.  
SC Okay, at 39 you've got S-V from a turn  
north of track. PAN-X with red filter.  
CAPCOM Roger, and you have a GO on your SCS.  
Recommend BD roll channel disabled -  
SC Okay.  
CAPCOM Minimum impulse.  
SC Roger.  
CAPCOM 7, Houston, we'd like to power up the  
CMC over Redstone, and watch the time again.  
SC Okay, will do.  
CAPCOM Roger. 7, Houston, I have another PAN-X  
update.  
SC Okay, go ahead.  
CAPCOM Roger, and this is really the number 1  
priority. At that 251 plus 00 see Ganges River in India  
south of track. Use PAN-X with red filter.  
SC Okay.  
CAPCOM 7, Houston. For your information quad B  
has 4 pounds margin from down the red line, and quad DELTA  
has 7 pounds.  
SC I see, so this is just O2 TB.  
CAPCOM If possible.  
SC Roger, got you.  
CAPCOM 7, Houston.  
SC Go, Ron.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2494200 (CDT 7:35p) 727/1

CAPCOM 7, Houston.  
SC Hello Ron.  
CAPCOM Rog. I just got word that the - we're  
going to need a little more time to check that surge of power  
on the Saturn.

SC Okay.  
CAPCOM Okay.  
SC Yeah, roger, I copy.  
CAPCOM About 30 seconds LOS. Redstone at 03.  
SC Roger.  
PAO Apollo Control at 249 hours 44 minutes.  
Guam has LOS. Donn Eisele completed fuel cell 02 purge.  
Got permission to expend some RCS propellant for photography  
purposes, and we gave him a few recommendations on what he  
might photograph. Next station to acquire will be Redstone  
at 250 hours 02 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 25002 (CDT 805p) 728/1

PAO This is Apollo control at 250 hours 02 minutes, and the Redstone has acquisition.

CAPCOM Apollo 7, Houston, through Redstone standing by.

SC Roger.

CAPCOM Roger.

SC Ron, I've got a note in the flight plan that says battery charge as required. Has that already been taken care of?

CAPCOM Sratch it out.

SC Okay.

CAPCOM Apollo 7, Houston, opposite OMNI.

SC Roger.

CAPCOM Apollo 7, Houston, everything's up to snuff on the computer. You can go ahead and power down.

SC Okay.

CAPCOM Apollo 7, Houston, one minutes LOS Ascension at 32.

PAO Apollo control at 250 hours 13 minutes, Apollo 7 beyond the Redstones range now. During this pass Donn Eisele powered up the command module computer. Ron took a look at the navigation vector, determined that it looked good and the computer powered down again now. Apollo 7 nearing the end of the 157 revolution. Next station to acquire will be Ascension at 250 hours 31 minutes. This is mission control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2503100 (CDT 8:35p)729/1

PAO This is Apollo Control at 250 hours, 31 minutes into the mission. Apollo 7 coming up on Ascension now. Canaries will acquire about the time Ascension LOS. We'll stand by.

CAPCOM Apollo 7 Houston through Ascension standing by.

SC This is Apollo 7.  
CAPCOM Roger. Apollo 7 Houston, when you get a chance request onboard readout PYRO A and B and BAT C. No hurry.

SC Okay, How much time to LOS  
CAPCOM I missed that, say again  
SC How much time to LOS?  
CAPCOM Roger, about three and a half minutes.  
SC A PYRO A is 36.9 and PYRO B is 36.8.  
CAPCOM Roger, copy. Thirty seconds LOS

Redstone at 38.

PAO This is Apollo Control at 250 hours and 41 minutes. Canaries has LOS. Apollo 7 will be out of touch for about the next hour. The next station to acquire will be Redstone in the South Pacific. At 251 hours, 38 minutes. This is Mission Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2513800 (CDT 9:40p) 730/1

PAO This is Apollo Control at 251 hours  
38 minutes. Apollo 7 coming up on the Redstone now after  
about an hour of being out of touch. We'll stand by for this  
pass.

CAPCOM Apollo 7, Houston through Redstone standing  
by.

SC Roger, Houston, Apollo 7.  
CAPCOM Roger, loud and clear Donn. Apollo 7,  
Houston.

SC Roger, go.  
CAPCOM Roger, we understand you have a cabin  
soaked with cold, and we don't feel the cabin cold soak is  
necessary this time.

SC Roger, I've got a cabin temp of 65 degrees  
and suit temp of about 51. It's very comfortable in here  
right now.

CAPCOM Roger.  
SC Speaking of cold soak and related things,  
we were discussing putting the secondary water boiler on for  
re-entry and leaving the primary off. Has there been any  
discussion of that down there?

CAPCOM Lots of it.

SC Yeh, I bet.

CAPCOM We're still discussing Donn.

SC Okay.

CAPCOM Apollo 7, Houston opposite OMNI.

SC Roger.

CAPCOM Apollo 7, Houston 1 minute till LOS.

SC Roger, Houston.

CAPCOM Antigua at 59.

SC Roger, 59 for Antigua.

PAO This is Apollo Control at 251 hours  
49 minutes. Redstone has LOS. The flight controller team  
lead Jerry Griffin is in the process of relieving the Gene  
Kranz team. To recap the activities of this shift picked up  
in revolution 154 over the tracking ship Mercury. The crew  
was doing sunrise photography at that time. Walt Cunningham  
gave a rather colorful description of the sunrise. Completed  
an environmental control system redundant point check over  
Hawaii on that rev. And over Ascension on rev 155, Wally  
Schirra reported shutting down the SCS for the evening. That  
same rev over the Mercury, Walt Cunningham came up with a  
couple of questions he wanted some advice from the ground on.  
One was on fuel cell 2 which the condenser temperatures have  
been running a little higher than normal. He wondered about  
taking fuel cell 2 off the line if it got too warm in the

APOLLO 7 COMMENTARY, 10/21/68, GET: 2513800 (CDT 9:40p) 730/2

morning, letting it cool down, and putting it back on the line just before the de-orbit burn. He also advised that he had over serviced the primary evaporator today, and thought it might be a good idea to use the secondary coolant loop for the suits circuit, and use radiators only on the primary loop. We haven't passed any answers up yet on either of these items. The EECOM officer and his assistants are still in the process of studying them, and the answers will be passed up prior to the time they'll be needed. We got a battery status over Ascension the start of REV 156. Batteries looked good. Over the Mercury on that rev all of the crew talked to Gene Kranz, and expressed their appreciation for the support of his team during this mission. Donn Eisele was awake, and at this time Schirra and Cunningham started their sleep period. And that same revolution over the Redstone, Donn Eisele asked for permission to use a few pounds of RCS propellant. He wants to use up as much unexposed film as possible, and he asked for suggestions on areas that he might photograph. He got permission to use the film and some suggested areas over Ascension at the beginning of REV 157. REV 157 over the Mercury we had a fuel cell O2 purge. Over the Redstone on that pass we powered up the command module computer, checked the navigation vectors. They looked very good, and the computer was powered down. We're now about to end the 158th revolution. At the start of this rev we've got a read-out on pyro-technic batteries. And just now over the Redstone we advised Donn Eisele that a cabin cold soak which had been listed as an optional activity would not be necessary. He reported the cabin temperature at 65 degrees. He said it was very comfortable. During this shift the decision was also made to keep the primary recovery area 164 dash 1 at it's present coordinates 27 degrees 38 minutes north, 64 degrees 10 minutes west. There had been some discussion of moving it slightly because of a front, but that will not cause a problem so that primary will not be moved. Present ephemeris of the spacecraft, apogee 228.5 nautical miles, perigee 90 nautical miles. Showing an orbital period of 90 minutes 28 seconds, weight in orbit 24 021 pounds. Next station to acquire will be Antigua at 251 minutes - 251 hours 59 minutes. This is Mission Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2520000 (CDT 10:00p) 731/1

PAO This is Apollo Control 252 hours into the mission. We have acquisition at Antigua. Let's listen in.

CAPCOM Apollo 7 Houston through Antigua. A one line flight plan update.

SC Go ahead, Ron.

CAPCOM Roger. At 258 plus 30, oxygen fuel cell purge.

SC Roger, I understand. An O2 fuel cell purge at 258 plus 30.

CAPCOM Roger.

PAO This is Apollo Control, 252 hours 05 minutes into the mission of Apollo 7. We have lost contact with Antigua. We're anticipating picking up the spacecraft at Canary Islands at 252:09. That's about 4 minutes from now. This is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 25209 (CDT 10:15p) 732/1

PAO This is Apollo control 252 hours 09  
minutes into the mission of Apollo 7. We're acquiring now  
at Canary Island tracking station. Let's listen in.

CAPCOM Apollo 7, Houston, through Canary.

SC Roger, good morning, Bill.

CAPCOM Good morning and a pleasant last day to  
you.

SC Yea, oh, boy.

CAPCOM Apollo 7, Houston, a little over half  
minute LOS Canary S-band volume up and 45 seconds for about  
two minutes of coverage at Madrid.

SC Apollo 7, Roger.

PAO This is Apollo control 252 hours 18  
minutes into the mission of Apollo 7. We have lost acquisi-  
tion at Canary Islands our next point of contact will be  
Honeysuckle Creek at 255. At 25218, this is Apollo control.

END OF TAPE

APOLLO 7 COMMENTATOR, 10/21/68, GET: 252500 (CDT 11:00p)

733/1

PAO This is Apollo Control 252 hours 55 minutes into the mission of Apollo 7. We're coming up on Acquisition at Honeysuckle Creek. Let's listen in.

CAPCOM

Apollo 7 Houston through Honeysuckle.

PAO This is Apollo Control 253 hours into the mission. We're some little more than 6 hours 38 minutes away from retrofire. We have lost acquisition at Honeysuckle. We're anticipating the Redstone tracking ship at 253:13. We have a weather report for the West Atlantic zone for tomorrow morning, which indicates that we'll have a weak cool front oriented northeast-southwest dividing the zone approximately in half. The weather on either side of the cool front will not be appreciably different. The prime target point will have partly cloudy to cloudy skies with the ceiling 1500 to 1800 feet; visibility 10 miles; scattered showers; wind from 210 degrees at 15 knots; seas 3 to 5 feet; and temperatures in the mid 70's. So, all in all, it looks like a fairly good morning. At 253:01 in the 159th revolution, this Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 25313 (CDT 11:15) 734/1

PAO This is Apollo Control, 253 hours,  
13 minutes into the flight of Apollo 7. We're approaching  
the Redstone Tracking Ship. We should have acquisition in  
a very few seconds. Let's listen in.

CAPCOM Apollo 7, Houston, through Redstone.  
Standing by. Apollo 7, Houston. Are you trying to call?

SC Negative, Bill.

CAPCOM Okay.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 2532300 (CDT 11:25p) 735/1

CAP COM Apollo 7, Houston, one minute to LOS  
Redstone, Antigua at 32.

SC Roger.

PAO This is Apollo Control, 253 hours 24 minutes into the mission of Apollo 7. For the past couple of hours we've had a very quiet spacecraft. All systems are functioning properly though. They're anticipating Antigua at 253 hours 32 minutes. We're now completing the 159th revolution at near our apogee of 228 nautical miles. We're approaching the West Coast of South America at 253 hours 25 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 25332 (CDT: 11:35p) 736/1

PAO This is Apollo Control 253 hours, 32 minutes into the mission of Apollo 7. We're just starting on our 160th revolution of the earth. We have three revolutions to go before our re-entry. We should have acquisition with the Antigua tracking station in a very short while. Let's listen in.

CAPCOM Apollo 7, Houston through Ascention - standing by.

SC Roger, Bill.

CAPCOM That is Antigua.

SC Uh, Bill at what station pass do you expect the update for the retro maneuver?

CAPCOM Stand by, Donn. - Hey, Donn it will be over Antigua the next pass - be about one hour and a half.

SC Okay.

CAPCOM Apollo 7, Houston one minute LOS Antigua, Canary at 44.

SC Roger.

PAO This is Apollo Control 253 hours, 41 minutes into the mission of Apollo 7. We will lose acquisition at Antigua in a very few seconds and we will pick up acquisition at Canary Islands at 25344 about two and a half minutes from now. We're now beginning the 160th revolution. After this revolution we will have three more to go before deorbit and re-entry. We'll stand by now for the Canary Island pass.

END OF TAPE

APOLLO 7 COMMENTARY, 10/21/68, GET: 25342 (CDT 11:45) 737/1

CAPCOM Apollo 7, Houston, LOS Canary. Apollo 7  
Houston, opposite omni please.

SC Roger.

CAPCOM Roger. Apollo 7, Houston, 1 minute LOS  
Canary. S-Band up at 53 and we'll have Carnarvon at 21.

SC Roger, say again Bill.

CAPCOM Roger, S-Band volume up in about 1 min-  
ute for the Madrid pass and if no contact we'll have Carnarvon  
at 21.

CAPCOM Oh okay, understand.

PAO This is Apollo Control, 253 hours,  
54 minutes into the mission of Apollo 7. We have lost  
acquisition at the Canary Islands. And in a few seconds,  
we will lose acquisition at Madrid. Our next point of con-  
tact will be Carnarvon at 25421. The last couple of hours  
as we said before have been exceptionally quiet - the quiet-  
est during the mission for a light period of time. All goes  
well with the spacecraft at this time. At 25354, this is  
Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 2542000 (CDT 1220a) 738/1

PAO This is Apollo Control 254 hours 20 minutes into the mission of Apollo 7. We are now approaching the Carnarvon tracking station; let's listen in.

CAP COM Apollo 7, Houston through Carnarvon standing by.

SC Roger, Houston, Apollo 7 here.

CAP COM Rog.

SC Houston, Apollo 7.

CAP COM Apollo 7, Houston, go.

SC Ah, Bill ... briefing ...do up here.

Wally and Walt are still asleep. I've got some of the spacecraft stowed ... without disturbing them and I'm going to be putting my suit on here pretty shortly. At the beginning of the next night pass, I'm going to try to get P51 accomplished so I can get a leg up on the whole ... that way when your update comes up later in the pass, why, ah, if there's time I'd like to get ... might wait until the next one.

CAP COM Okay, right, we'll - we have the rest mat, nav load and the target load ready for the Antigua pass and that will be at 08 past the hour.

SC Okay, zero eight?

CAP COM Right.

SC Rog.

CAP COM So that will be ready and waiting if you - oh, that'll give you, ah, let's see that won't give you too much of that night pass actually.

SC I'd like to do the P51 before that you see.

CAP COM Okay, if you could - if we could get through with that before zero eight, then we could get those three loads up to you and have that done and away with.

SC Yeah, that's a good idea, Bill. Okay, fine.

CAP COM Okay, thank you.

SC I think we can get it all done but maybe the fine alignment before they get up.

CAP COM Okay. (pause) Apollo 7, Houston, one minute LOS Carnarvon, Honeysuckle in about one minute, turn your volume up.

SC Okay.

CAP COM Apollo 7, Houston through Honeysuckle standing by.

SC Roger, read you.

CAP COM Rog.

END OF TAPE

CAPCOM Apollo 7, Houston.  
SC Roger, go Bill.  
CAPCOM Right, Don. I have a little discussion here on a couple of items. I would like to make a couple of recommendations. First, for entry we would like all three fuel cells on line. And secondly, we like to operate the coolant loops primary without the evaporator, secondary looping bypass with the evaporator on.  
SC Roger, understand. You want the fuel cells on. All three formed for entry.  
CAPCOM Affirmative.  
SC And on the coolant you want to run the primary system with the evaporator shut down. And on the secondary bypassing the radiators with the secondary water boiler on it.  
CAPCOM That's affirmative and of course if the secondary evaporator quits, well you can switch to primary evaporator and try it.  
SC Roger, understand.  
CAPCOM Okay.  
SC Thank you.  
CAPCOM Roger. Apollo 7, Houston, opposite omni please. Apollo 7, Houston, opposite omni.  
SC Apollo 7, Houston. How do you read?  
SC Fine, Bill.  
CAPCOM Okay, one final item. Thi9 secondary radiator - we'd like to activate that at 258 hours.  
SC You're going to do what?  
CAPCOM I'm sorry - secondary evaporator at 258.  
SC Oh, okay secondary evaporator at 258 hours, understand.  
CAPCOM Roger.  
SC ...here.  
CAPCOM Thank you. And we're coming upon 1 minute LOS Honeysuckle. We'll have Redstone at 50.  
SC Roger.  
PAO This is Apollo Control, 254 hours, 37 minutes into the mission of Apollo 7. We're anticipating the Redstone Tracking Station aquisition time at 25450, some 13 minutes from now. During that pass we heard Astronaut Eisele talking to CAPCOM Pogue here in the Control Center - indicating that Schirra and Cunningham were asleep. He also indiated he had stowed everything he could without disturbing Schirra and Cunningham. He was shortly going to put on his spacesuit. He said at the beginning of the next pass he would do a P51 and a P52. The P51 of course being the inertial measuring unit orientation program. And the P52 program being the inertial measuring alignment. Astronaut Pogue indicated that for entry the three fuel cells

APOLLO 7 COMMENTARY, 10/22/68, GET: 25430 (CDT 12:28) 739/2

PAO should be put on the line - all three of them that the primary coolant loop should be on with the evaporator shut down and the secondary bypass radiators with the water boilers on. And the secondary evaporator should be on at 258 hours. At 254 hours, 38 minutes, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 2544900 (CDT 12:50a) 740/1

PAO This is Apollo Control 254 hours 49 minutes into the mission of Apollo 7. We're coming up now on acquisition with the Redstone tracking ship on the 160th revolution; let's listen in.

CAP COM Apollo 7, Houston through Redstone standing by. (pause) Apollo 7, Houston. No need to acknowledge, when you get around to it, opposite omni please. (pause) Apollo 7, Houston. No need to acknowledge, one minute to LOS Redstone, Mila at zero six, Antigua at zero eight.

SC

Okay, Bill.

PAO This is Apollo Control 254 hours 58 minutes into the mission of Apollo 7. We are completing our 160th revolution very shortly, at that point we'll have three more to go. At this time, it is 04 hours 41 minutes and 01 second to the initiation of the retrofiring of SPS engine for reentry. Our next point of contact will be Merritt Island facility in Florida. They should have acquisition at 255 hours 06 minutes into the mission. At 254:58, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 2550600 (CDT 1:10a) 741/1

PAO This is Apollo Control 255 hours 06 minutes into the mission of Apollo 7. We have a retrofire time that was just passed to us; retrofire time now stands at 259 hours 39 minutes 16 seconds, which would be 5:42:01 Central Daylight Time. We now are coming up with acquisition at Merritt Island, Florida tracking facility; let's listen in.

CAP COM Apollo 7, Houston through Mila standing by.

SC Roger, Bill. (pause) Ah, Bill, you ready with the updates.

CAP COM Say again, Donn.

SC Are you ready with the updates?

CAP COM Rog, we're ready if your in ACCEPT.

SC You've got it.

CAP COM Thank you. (pause) Donn, we're in a keyhole right now, it will be coming up in a couple of minutes.

SC Okay. (pause) I'm standing by for the maneuver pad whenever you have it.

CAP COM Rog, okay. I'll give it to you as soon as I get it.

SC Oh, you don't have it yet. I see, no sweat.

CAP COM Apollo 7, Houston. I have maneuver pad when you're ready to copy.

SC Okay. Go ahead.

CAP COM Roger. 164 dash 1 alpha retrofire, 259 39 1594 minus 02071 minus 00000 plus 02822 2350 minus 0260 03305 24010 minus 071 minus 134 012 30 3058 314 259 00 0000 minus 2447 plus 06813 1561 180 180 000. Comments, sextant star not visible after 259 + 21. Another comment, backup align stars are north set. I do have boresight star information.

SC Roger, let's skip the boresight information for now. Ah, readback is follows: 164 dash 1 alpha, 259 39 1594 minus 02071 minus all balls plus 02822 2 (garble) 0 minus 0260 03305 24010 minus 071 minus 134 (garble) 12 30 (garble) 8 314 259 00 0000 minus 2447 plus 06813 1561 180 180 zeros.

CAP COM Roger, check on a couple of them on noun 42 apogee 2350 and in noun 48 Y-trim 1334.

SC Roger, that's what I got.

CAP COM Readback is correct.

SC You've got a very loud squeal in your transmitter there.

CAP COM Rog, thank you.

END OF TAPE

CAPCOM Apollo 7, Houston.  
 SC Roger, go Bill.  
 CACCOM Right, Donn. We could get the SPS line heaters to AB.  
 SC Okay, line heaters on, right?  
 CAPCOM Right.  
 SC ...could get all the way down to 60 degrees.  
 CAPCOM Apollo 7, now that we have the rest nav and targets in, the computer is yours. One minute LOS Antigua. We'll have Canaries at 20.  
 SC Roger, Bill understand. I've got the computer back here...you've got a very loud squeal.  
 CAPCOM Okay, I'm checking on it.  
 SC ...your transmitter is real bad.  
 CAPCOM Roger.  
 PAO This is Apollo Control, 255 hours, 17 minutes into the mission of Apollo 7. On that pass we heard Astronaut Eisele indicate that voice communications were not too good because there was a loud squeal on the line. CAPCOM Pogue indicated that we're checking on it. We have acquisition coming up with Canary Islands Tracking Station in about 2 minutes. So we'll standby for the Canary Islands Pass.  
 CAPCOM Apollo 7, Houston. Would you put a block please? Apollo 7, Houston, through Canary. Apollo 7 Houston, if you read - go to block. Apollo 7, Houston, 2 and 1/2 minutes LOS Canary. We'd like block on the up link when you can get around to it please. Apollo 7, Houston did you call?  
 SC Negative, Bill. I was just trying one of my helmets to see if it fits.  
 CAPCOM Okay, would you go to block please?  
 SC I did.  
 CAPCOM Thank you.  
 SC Houston, Apollo 7. How do you read?  
 CAPCOM I read you five square.  
 SC Okay, fine. I just had my other helmet on and I just wanted to check it out.  
 CAPCOM Roger. About 1 minute LOS Canaries. We'll have Carnarvon at 55 and confirm going to block now.  
 SC Roger. We're in block now.  
 CAPCOM Thank you.  
 PAO This is Apollo Control, 255 hours, 28 minutes into the mission of Apollo 7. We've lost acquisition at Canary Islands. We're anticipating our next acquisition point to be Carnarvon at 25555. We're now in our one hundred sixty first revolution. After the completion of this revolution we have two more to go for the Apollo 7 mission. At 25529, this is Apollo Control.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 2555400 (CDT 2:00a) 743/1

PAO This is Apollo Control 255 hours 54 minutes into the mission of Apollo 7. We're just coming up on acquisition with Carnarvon; let's listen in.

SC Houston, Apollo 7, did you call?

CAP COM Rog, Apollo 7, Houston through Carnarvon.

SC Roger. We're up and at 'em here. I've got my lumpy suit on and Walt and Wally are crashing around in the LAV getting something to eat.

CAP COM Rog, understand. And, ah, Donn, in behalf of the GOLD team here in Mission Control, we wish to extend our congratulations to the crew and wish you every good wish for a nice soft landing and we'll see 'ya tomorrow.

SC Well, thank you pardner. Thanks a lot for helping us out. Who's your flight director there.

CAP COM It's Jerry Griffin.

SC Is Jerry there?

CAP COM Jerry, air ground two.

GRIFFIN Yeah, I'm here.

SC Hey, how 'ya doin', buddy?

GRIFFIN Fine.

SC Good, sure appreciate all the fine help you gave us up here.

GRIFFIN Well, thank you and we're looking forward to seeing you when you get back to the ranch.

SC Yeah, I'll say. We'll have to -- right, Walt and Wally send their regards, Jerry, to you and all the other fellas down there. They're not suited up yet and don't have their com on so I'll just pass it along.

GRIFFIN Okay, thanks much, Donn.

SC See 'ya later.

GRIFFIN Rog.

SC You going off duty, Bill.

CAP COM Rog, I'm staying here though. Jack will be talking with you now.

SC I see, okay.

CAP COM I'll be watching you from here.

SC Yeah, I guess you would at that, wouldn't you?

CAP COM Good morning, Donald. Good morning, Donn.

SC Hi, Jack.

CAP COM Apollo 7, Houston.

SC Roger, Jack.

CAP COM Ah, Donn, just so it doesn't startle you you're getting close to a master alarm on fuel cell two. It's the TCE.

SC Okay, we were just talking about that up here. Walt's of the opinion that we ought to take that

APOLLO 7 COMMENTARY, 10/22/68, GET: 2555400 (CDT 2:00a) 743/2

SC mother off line when it goes over limit  
and save it until later. What do you guys think?

CAP COM Okay, stand by. (pause) Apollo 7,  
Houston.

SC Go.

CAP COM Okay, Donn. On fuel cell two, there's  
been a lot of discussion on that down here and they feel  
that with the trends that they've seen that the T sub CE  
should top out about 185 and they would just as soon leave  
it on the line to keep from any switching transients there.  
Ah, and you shouldn't reach any higher than 185 at retrofire.

SC Okay, we're reading 181 right now.

CAP COM Okay, that's about - you're about 4 deg-  
rees higher than the actual there. Our value down here now  
is 177.

SC Okay.

CAP COM Apollo 7, Houston. We're about one min-  
ute to LOS Carnarvon. Do you want to turn S-band volume up  
we'll pick up Honeysuckle for a long pass here.

SC Okay.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 25604 (CDT: 2:10a 744/1

CAPCOM Apollo 7, Houston one minute LOS  
Honeysuckle. We'll pick up Guaymas at 36.  
PAO This is Apollo Control 256 hours, 12  
minutes into the mission of Apollo 7. We are losing  
acquisition at Honeysuckle, anticipating Guaymas at 2536.  
During our Carnarvon pass we heard astronaut Eisele indicating  
that Schirra and Cunningham were eating and the spacecraft.  
And Eisele is presently in his suit - in his lumpy suit, as  
he put it. The whole team offered congratulations and the  
Apollo 7 crew responded and send regards and talked to  
the flight director, Griffin. Astronaut Swigert is now  
on asCAPCOM as the pime came - the launch team comes on  
duty here at the Control Center. Astronaut Swigert indicated  
fuel cell number 2 is close to the master alarm but that they  
should not be concerned about it on board. Eisele came back  
indicating that Schirra would possibly like to take fuel  
cell number 2 off the line for now and let the temperatures  
go down and put it on the line prior to re-entry. And  
astronaut Swigert, the CAPCOM, indicated no that it won't  
reach more than 185 degrees during rtro fire and there-  
fore there is no concern. At 256 hours, 14 minutes into the  
mission this is Apollo Control.

END OF TAPE

PAO This is Apollo Control, 256 hours, 36 minutes into the mission of Apollo 7. We're coming upon the completion of revolution 161. After this there are two more to go for reentry. We should have acquisition at Guaymas, Mexico very shortly. Let's listen in.

CAPCOM Apollo 7, Houston, through Texas. Standing by.

SC Roger, Jack. How do you read? Are we hard to hear?

CAPCOM I read you five by, Walt.

SC How's it going this morning?

CAPCOM It's going very well. How's things with you?

SC Fine. Are you there? Are you familiar with the fuel cell performance on yesterday's burn?

CAPCOM Roger, Walt. I am.

SC Okay, I guess - if it goes on up to 200 and we're in a retro countdown, I'm not going to sweat it anyway. I'm going to let it run on. I guess - it seems to me if we went ahead and open circuit here for the next hour and a half we'd - maybe for the next 2 hours, a little longer around minus 30 or minus 35 minutes we'd have little or no problem with it.

CAPCOM Roger. I don't think from what we have been talking about that you'll have to worry. It will get up over 200 and if it does we have been given the Go to let it go ahead and - go over 200.

SC Roger, that's my intention.

CAPCOM Okay, we concur.

SC It's a shame we can't get that one back and take a look at it.

CAPCOM I agree. From all data they have a pretty good idea of what it is.

SC Very good.

CAPCOM Apollo 7, Houston. Apollo 7, Houston.

SC Roger, Jack. Go ahead.

CAPCOM Okay, Walt, at 258 here when you activate the secondary loop - we'd like you to configure the suit heat exchanger for bypass on the primary loop and for flow on the secondary loop.

SC Already set up.

CAPCOM You're way ahead of me.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 2564600 (CDT 2:50a) 746/1

CAP COM Apollo 7, Houston, one minute LOS Ber-  
muda, we pick up the Canaries in about three minutes.

SC Rog, Jack. (pause) Hey, Jack, give  
me 20 clicks on the water now.

CAP COM Okay, Walt.

PAO This is Apollo Control 256 hours 52 min-  
utes into the mission of Apollo 7. We are beginning the  
162nd revolution, we will complete this revolution, go one  
more, retrofire and land Apollo 7. Next point of contact  
will be Canary Islands, it will only be about 2-1/2 minutes  
from this time so we'll stand by for any possible voice  
contact. At 256:53 this is Apollo Control.

END OF TAPE

CAPCOM Apollo 7, Houston, through the Canaries.  
SC Roger, Jack. (garble)  
CAPCOM Okay will fine, Walt.  
SC I'd like to bring you up to date on the  
canister change. We did the canister change 21...  
CAPCOM Okay Walt, you got cut out there, copied  
canister change 21.  
SC We put it off until we had 3 mm or some-  
thing like that on the CO2 partial pressure. Anyhow, it is  
written down on the DTO book which I can't quite get at now.  
Hang on for a second. Hey Jack, at 245 hours, and 56 min-  
utes we did our last - put our last fresh canister in. And  
in the next hour or so we are going to recycle number 1 back-  
in.  
CAPCOM Okay fine. Could you bring me up to  
date on the -  
SC We sure had a square of unfilled air.  
CAPCOM Okay you're right.  
SC We're actually two canisters short on  
this flight.  
CAPCOM Roger, Walt.  
SC It seems impossible, doesn't it?  
CAPCOM It kind of does. Could you bring me  
up to date on the - how you're coming on stowage?  
SC Roger. Stowage is all but complete.  
We took the three bio...and stowed them in the fecal canis-  
ter where we have been taking out the fresh fecal bag. And  
we're going to be getting unsuited in the water as soon as  
we get a change on there, assuming we all come out of it in  
a nice smooth shape. And we have two temporary stowage bags  
up with the - coveralls in the temporary stowage bags.  
CAPCOM Okay.  
SC Everything else is stowed in its nominal  
place.  
CAPCOM Okay, you got the gloves stowed and  
helmets on?  
SC The helmets we don't have on. We're  
going to try the helmets. The general feeling now is that  
we will probably not be wearing those helmets. We're going  
to make one more stab when we get the couch down to the  
launch position and see what we can do about clearing our  
ears. I'm probably in better shape than the other guys and  
I'm not too sure about my ears. By the way Wally and Don  
talked they are in a little bit worse shape than I am. And  
if they go with their helmets off, that's the way I'll go to.  
We don't want to get the suit loop as the way it is supposed  
to act.  
CAPCOM Okay.  
SC There are still a few items still left

APOLLO 7 COMMENTARY, 10/22/68, GET: 25656 (CDT 3:00) 747/2

SC to be stowed that put in shape. That's  
like the data file, the temporary stowage items - the F -  
CAPCOM Is that an F item, Don.  
SC F one and F two still have a couple of  
small items that we are going to have put back in the right  
place when Wally gets to the couch. And he is about suited  
and he will be on calm shortly.  
CAPCOM Okay, Wally. How about the oxygen masks?  
Are they put away?  
SC They are all stowed.  
CAPCOM Okay.  
SC If we do not wear the helmets, the hel-  
mets will be tied down at the foot of the couch in front of  
each guy's couch will be below the level of the canisters  
down there. So it's out of the couch envelope.  
CAPCOM Okay. We're not concerned about  
hurting the helmets. We're concerned about your heads.  
SC Roger, we understand and we're trying  
to make a go of it all the way. We haven't gotten in the  
position to try them on in the couch in the boost position  
yet. However, we do feel if we go with the helmets off,  
we'll have pretty damned good protection set up around us.  
CAPCOM I'd say we're about 1 minute LOS  
Canaries. We'll pick up Tananarive about 1 niner.  
SC Right. (garble)  
CAPCOM Go ahead, Don. You've taken the last  
actifed at 257 here?  
SC Talking about actifed, we all took it.  
CAPCOM Okay, real fine.  
SC We've still got our nausea pills left  
to take.  
CAPCOM Okay. The carrier reports waves-one  
foot out there.  
SC That sounds almost good enough for the  
Air Force.  
CAPCOM We've got a little bit of chop. Let's  
break the landing just a little bit.  
SC If you've got a chariot, watch out, we'll  
be coming down his stack. What's the carrier call?  
CAPCOM All right, carrier call was essex.  
SC How could you...02?  
CAPCOM I'll be giving you a run down on whether  
the call signs says - we go a little bit further here.  
SC (garble)  
CAPCOM Roger, five by, Wally. We're just about  
to lose you.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 25731 (CDT 3:35a) 748/1

PAO This is Apollo Control Houston 257 hours  
31 minutes. We've just tagged up on Carnarvon.  
SC Fuel cell is still climbing, 184 my

gauge.  
CAP COM Yeah, we're considering open circuit.  
We want to get a few data - ah, a little bit of data flow  
here before we make any decision.

SC We'll take 10 degrees flaps, too.

CAP COM Rog. Okay, you ready on the entry up  
there Walt?

SC Read it.

CAP COM Okay. 164 dash 1 alpha 190 000 042  
000 10635 25954 16 plus 20 plus 2763 minus 06417 16 plus 49  
minus 02846 55/55 19 plus 22 17 plus 02 19 plus 58 24 plus  
12 043 minus 18/plus 40.

SC Roger, Jack, readback follows: 164  
dash 1 able 190 000 042 000 10635 25954 1620 plus 2763  
minus 06417 1649 minus 02846 55 55 1922 1702 1958 2412 043  
minus 18/plus 4 zero. And I have a question on your maneuver  
update remarks.

CAP COM Okay, stand by. Go ahead.

SC Roger, at the top of remarks is SCS 259  
and I've got written in here 21 on the pad, shouldn't that  
probably be 41 if this is for SCS burn backup.

CAP COM Ah, that was for the sextant star not  
visible after 259 plus 21 plus 00.

SC Oh, okay that's for the star 259 + 21.

Thank you.

CAP COM uh huh.

SC And the entry update readback was correct?

CAP COM Ah, perfect.

SC Gotta do something right.

CAP COM Okay, Walt, ah, we're recommending omni  
A for the burn and omni C for post set.

SC Understand, wilco.

CAP COM And you'll be Simplex A for reentry, and -

SC That's affirmed.

CAP COM And cabin fans, that's a crew option.

You can have no fans, one fan or two fans. Your choice.

SC We'll have no fans, however, I am a  
little bit interested in bringing on the secondary loop  
loops ... the suit is a little bit warm.

CAP COM Okay, stand by.

SC Hey Jack. On the maneuver pad, the  
velocity counter setting is different from what showed up  
on the DSKY with the Delta V by 19.5 feet-per-second, I  
think, and you have Delta V tailoff at 19.

CAP COM Okay, stand by, Walt, we'll get a

APOLLO 7 COMMENTARY, 10/22/68, GET: 25731 (CDT 3:35a) 748/2

CAP COM reading on that. (pause) Okay, Walt, on your last question on the Delta V counter, ah, that 19 feet a second is our value for the adjusted tailoff and what you should be reading in the Delta V counter after the burn is over.

SC I understand that, Jack, but the Delta VC that you sent on is generally different from the G&N reading by that tailoff amount.

CAP COM Right. (pause) Okay, I guess I missed it Walt, why don't you go over it again. I guess I missed your question.

SC Okay. In doing P30 in one of the displays it shows the Delta V and we set the Delta V counter to be equal to the Delta V minus the Delta V tailoff. In this case, from your maneuver pad, they were different by 19-1/2 feet-per-second, which would indicate that there was 19-1/2 feet-per-second tailoff. I commented on it at the time because it seemed kind of large and now the Delta V at tailoff on the entry pad is 19.

CAP COM Okay, Walt.

SC It's a small point but I'd like to know which is which in case I have to update my entry chart.

CAP COM Okay, we'll discuss that, we're about one minute LOS Carnarvon you want to turn up S-band so we can get Honeysuckle.

SC Okay.

CAP COM Okay, Walt, on that question there, what has happened is the Delta V tailoff coming out of the CMC could be off by as much as one foot per second because we didn't update it yesterday. We chose not to do it because we felt it was accurate enough.

SC Okay, then I will update my entry chart based on how it differs from 19 feet per second, is that correct?

CAP COM That is correct.

SC Understand.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 25741 (CDT: 3:45a) 749/1

CAPCOM Apollo 7, opposite OMNI  
CAPCOM Apollo 7, Houston.  
SC Go ahead Chuck.  
CAPCOM Okay, Wally. We'd like to have you turn  
the H2 fans and heaters OFF now.  
SC That's done. OFF not AUTO.  
CAPCOM Roger, OFF not AUTO O F F, and Walt, we'd  
like to have you open circuit fuel cell 2, our plans are to  
probably bring it back on line over the states.  
SC Understand. Welcome to the club.  
CAPCOM Okay, we'd like to have you purge all fuel  
cells. First make an O2 purge on all fuel cells before the  
secondary loop activation.  
SC Okay, I'll go ahead and purge them now so  
that I can purge 2 before I take it off.  
CAPCOM Okay, we concur.  
SC Rog.  
CAPCOM And Walt, on your question on the secondary  
loop activation, you can bring that loop on line any time after  
you've done the O2 purge of the fuel cells. Apollo 7, we're  
about one minue LOS Honeysuckle. We pick up the Huntsville  
at .04.  
SC Roger.  
PAO Apollo Control here. That fuel cell  
temperature climbed about a hundred and eighty nine degrees  
We've seen it higher in the flight but for various reasons,  
mainly a look see, a chance to give the cell some time to  
cool down. Thats why they decided to take it off line and let  
it cool down before they reach the stateside area again.  
At 257 hours 47 minutes, this is Apollo Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 25804 (CDT 0:09a) 750/1

PAO This is Apollo Control Houston 258 hours  
04 minutes into the flight. We are due to acquire here just  
any second via Guaymas, via the ship Huntsville first and  
then break into Guaymas, let's tune in and listen.

CAPCOM Apollo 7, Houston through Huntsville,  
standing by.

SC Roger, loud and clear.

CAPCOM Okay, you are about 3 by, Wally.

SC Roger.

SC Huntsville, Apollo 7. We are going to

lock up now.

CAPCOM Apollo 7, opposite omni.

CAPCOM Apollo 7, Houston.

SC Go ahead.

CAPCOM Okay, Wally, we are ready to bring fuel  
cell 2 back on the line.

SC It's been setting down both busses, down  
around 26.3 volts, Jack. I think it may be a little bit  
safer if we wait another 1/2 hour or so to bring it on.  
What do you think?

CAPCOM Well, we are mulling it over here.

SC See, fuel cells 2 and 3 are both heat-  
ing up. They should pick it up, well, we ought to go ahead  
and turn it on, I guess, we keep triggering the main buss  
undervoltage down there.

CAPCOM Okay, we concur.

SC Okay, it started happening when I turned  
the secondary cold loop pump on. It was just enough to pull  
it down.

CAPCOM Roger, we were watching it.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 25814 (CDT 8:40) 751/1

CAPCOM Roger, we were watching it.  
SC It's back on the line.  
CAPCOM Okay, we're watching.  
PAO Apollo Control here. Fuel cell number 2  
as you heard it back on the line, it's temperature when  
we took it off the line. Back at Australia it was about  
189 degrees, it's now 169 degrees compared to fuel cells  
1 and 3. Both of which read - a temperature of 163. Fuel  
cells starts its gentle climb up again, it's prone to run  
a little warmer than the other two. It has been throughout  
the flight. The load sharing is quite evenly distributed  
around 33 percent. And the amps are shown also in equal  
distribution - 27 to 28 amps from each cell. In a very few  
minutes we'll start what might in this olympic year be  
called the gun lap. The final lap and if it is anything  
like some past manned flight - we can expect the crew to be  
giving a sign off to the ground stations as they pass over  
them. You heard some of that activity last night. As the  
crew said good-bye and thanked the ship Mercury, the Guam  
station, the Redstone, other stations that will not be seen  
today. Flight Director is asking his positions. Now for  
any last minute instruction, to speak now or be quiet. And for  
the record, the Flight Director has said we know of no more  
configuration requirements. Here is the COM again.  
CAPCOM Is your configuration - stowage config-  
uration for reentry now?  
SC Okay, we're all stowed, have the helmets  
still below our feet and we're rigged up, we're not strapped  
in.  
CAPCOM Okay. Are the O2 masks stowed some  
place where they might be accessible in case of RCS ingest  
on the chutes?  
SC They are at the normal point.  
CAPCOM Okay.  
SC And tell everybody to stop wringing their  
hands. We're happy. We've practiced this quite a few times.  
CAPCOM Okay. Practiced what? Apollo 7, Houston.  
SC Go ahead.  
CAPCOM Okay, Walt and Wally and Don, I give you  
a 164-weather I'll update it. Weather is generally good,  
1500 foot broken, 10 miles on the vis, winds are 210 at  
15 knots. Wave height is 4 feet. You got a carrier on  
station, three helicopters, two rescue aircraft.  
SC And what is the carrier call?  
CAPCOM Essex.  
SC They have a call, Jack, in lieu of a name.  
CAPCOM All right, standby Wally.  
SC Roger. Like we're Apollo 7 - they're  
thinking of putting names on them.

CAPCOM                    Okay, standby. Okay, Wally - the call sign for the carriers just the Essex. Your rescue aircraft is Kindley Rescue I and Kindley Rescue II. And the helicopters are recovery 1, 2, and 3.

SC                         Very good.

CAPCOM                    And I'll give you an update on the weather further along.

SC                         We're a special case the carrier's is using our name.

CAPCOM                    Roger.

PAO                        Mark, and the crew is beginning the hundred and sixty third revolution around the earth.

SC                         Hello, Jack do you read.

CAPCOM                    Okay, go ahead Wally.

SC                         We all feel very good and chipper up here. We all had a lot of good sleep. And we're well hydrated. We had a lot of food so there ain't much more to do but let the computer work for us.

CAPCOM                    Okay, I think we are all the same down here.

SC                         Very good.

PAO                        This is Apollo Control, Houston. That will wrap up the conversation for this pass as the crew makes additional final checks on their stowage list. We're getting some information on one of the rescue aircraft - Kindley Kindley rescue 1 - I think I heard had some which took off very long ago. And had some engine trouble shortly after take off, has returned to Kindley and will be replaced. Its replacement apparently has not yet left but - we'll give you more information on that as we get it. This is Apollo Control, Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 25832 (CDT 4:37a) 752/1

PAO This is Apollo Control Houston 258 hours  
32 minutes. We should have acquisition by the Canaries for  
this last circuit just any second; here goes the first call.

CAP COM Standing by.

SC Roger.

CAP COM Apollo 7, Houston.

SC Go ahead, Houston.

CAP COM Okay, Walt, you can turn the SPS line  
heaters off now, we're showing a valve temp of 60 which is  
okay.

SC Rog, turn 'em off. (pause) Houston,  
this is Apollo 7. I'll be prepared to talk about the whole  
mission when we get back.

CAP COM Roger, Wally. (pause) 7, we're about  
one minute LOS Canaries, we'll pick up Tananarive at 51.

SC Roger, we changed cannister number one  
and put it back in.

CAP COM Okay, copy that.

PAO And, that will wrap up any communication  
possibilities via Canaries. Be back up in about 6 or 7 min-  
utes through Tananarive.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GMT: 25851 (CBT 4:55a) 753/1

PAO This is Apollo Control Houston 258 hours  
51 minutes into the flight and just any second we should  
get our last tag up through Tananarive.  
CAP COM Apollo 7, Houston through Tananarive  
standing by.  
SC Roger. (pause) Houston, Apollo 7, do  
you read at Tananarive, over,  
CAP COM Roger, Walt, we're reading you about  
4 by.  
SC Okay, we'll come up over Carnarvon, we  
are set for splashing down. Standing by for power alarm  
and I assume that you will insure that we leave Carnarvon  
with a clean tape for reentry and if you don't will you  
let me know so I can command reset and get it going before  
we deorbit.  
CAP COM Houston. Okay, we'll do it. (pause) Apollo 7,  
Houston.  
SC Go ahead, Jack.  
CAP COM Okay, Walt, we didn't see you initiate  
the DAP with a verb 46 there.  
SC I did initiate the DAP.  
CAP COM Okay, that's all we wanted.  
SC Cleared or what? I'll send another one.  
I loaded the DAP right after P30 instead of rev 46. We're checking.  
CAP COM Okay, we just didn't see it and we wanted  
to confirm it.  
SC (garbled)  
CAP COM Right. (pause) Apollo 7, we're one  
minute LOS Tananarive, Carnarvon at zero six.  
PAO And that will wrap it up via Tananarive.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 25906 (CDT 5:11A) 754/1

PAO Apollo Control Houston. The first call  
is going out by Carnarvon.  
CAPCOM Apollo 7 Houston through Carnarvon  
standing by.  
SC Roger, are we go for pyro?  
CAPCOM Okay, stand by, we want to look at it here.  
SC Roger.  
PAO Schirra has armed his pyro technics,  
we're going to check them on the ground through Carnarvon.  
CAPCOM Apollo 7 you are GO for pyro arm.  
SC Thank you, Jack.  
SC Pyro on.  
SC Pyro A on.  
SC Pyro B on.  
SC 01 on and 02 on.  
SC That's kind of a lot of fun to hear that.  
SC We've pressurized our command module  
SCS. We seemed to have a chattering regulator for a while.  
CAPCOM Roger  
SC And she's up to pressure.  
SC Houston Apollo 7.  
CAPCOM Go ahead 7.  
SC Did you ever have a Model A on a cold  
day? That's what it sounded like.  
CAPCOM Roger.  
SC We could hear it go through the lines.  
We are happy with the CM RCS.  
SC Houston, this is Apollo 7. Do you monitor  
our helium pressures on rings 01 and 02?  
CAPCOM Affirm.  
SC Roger, we're reading 35 Check list calls  
for 4 to 4.  
SC Calls for 4,000?  
SC It looks like it may be warming up.  
SC Do you concur with the 4,000 check list,  
Houston?  
CAPCOM Affirm, we're watching it here. We'll  
let you know.  
SC Roger, Okay.  
SC We don't have a pump on the end so we  
use what we've got.  
CAPCOM Apollo 7 Houston.  
SC Go ahead, Jack.  
CAPCOM Stand by, Wally.  
CAPCOM Apollo 7 Houston,  
SC Go ahead.  
CAPCOM Donn, our telemetry here shows that the  
RCS dap has not been initiated.

APOLLO 7 COMMENTARY, 10/22/68, GET: 25906 (CDT 5:11A) 794/2

SC Okay, we'll do it again.  
CAPCOM Okay.  
SC Okay, we'll check your telemetry up,  
CAPCOM Roger.  
SC What does that look like?  
CAPCOM Stand by.  
CAPCOM Okay 7, we show it running now.  
SC Very good, the call was worth it.  
CAPCOM Roger.  
SC We did initiate that before. We were  
quite surprised,  
CAPCOM Roger.  
CAPCOM Apollo 7, the DSC is yours and it's clean.  
SC Roger, thank you. Will you people  
initiate it's motion prior to the deorbit burn?  
CAPCOM Okay, Walt, you'll need to hit high bit  
rate and up telemetry to command reset at that time.  
SC Okay, we'll do it then, and we'll do it.  
30 seconds prior to burn.  
CAPCOM Roger, that's fine.  
CAPCOM Apollo 7, we're about 2 minutes LOS  
Carnarvon, you want to turn up S-band for Honeysuckle?  
SC Okay.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 25916, (CDT: 5:21a) 755/1

PAO This is Apollo Control Houston; we are about to lose signal by the Honeysuckle Station in Australia for the last trip in this 163rd rev. We'll make Hawaii at 259 hours, 33 minutes, about 14 minutes from now. The weather out there in the recovery area this morning is quite good; the seas are described by news almost a dead calm. Wave heights on the order of 1 foot. They have had some showers in the area, but they are somewhat overcast, 15 hundred feet and broken. Gentle winds - the recovery point about 950 miles east of Cape Kennedy. We have just talked to the flight deck of the Essex; they are all set. We are sure the airplanes and the helicopters have been deployed and they are ready for their recovery role. In addition to the Essex, there is the destroyer The Storms, which is running with the Essex at 1500 yards to the East to rescue aircraft, Rescue 1, Rescue 2, operating out of Kinley Airforce Base in Bermuda. There is an AIRA aircraft, radar aircraft, capable of cummunicating and receiving signals from space; that aircraft is out of Patrick Air Force Base in Florida and the recovery helos, you'll hear reference to them, they are recovery 1 and recovery 2, both of which are backups, recovery choppers; recovery 3 will be the prime recovery chopper this morning. All 3 are Sikorsky helicopters; that will carry 5 - a crew of 2 or 3; and about 3 swimmers. In addition, the helicopters designated 1, a Sikorsky 3D helicopter, and finally and the most important helicopter, that one-designated Air Boss. And it's entirely possible Air Boss will provide us with a running on scene copy, overview or commentary of the action. If that's a good signal, we will patch it right out to you, because obviously they have the best vantage point. At 259 hours, 22 minutes, this is Apollo Control Houston.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 25933 (CDT 5:39a) 756/1

PAO This is Apollo Control Houston 259 hours 33 minutes. In just any moment, we should acquire the spacecraft via Hawaii and then there will be a handover to the ship Huntsville as we start our course across the States. You have heard, in the last few days, a lot of discussion about the pressure on the eardrum. That pressure, the pressure will change in the cabin and it should go from 5 pounds starting its climb to sea level pressure of about 14.7. The change will occur at around 27,000 feet and by the time we are down to 10,000, we should very nearly be at 14 pounds. So if our communication with the spacecraft is good back from the recovery area, we may be able to get a report on how the ears fared while the crew is on main chute. The first call has gone out to the spacecraft but we have not heard their return call. We will stand by until we get that.

CAPCOM Apollo 7, Houston through Hawaii.  
SC Roger, just completed a gimbal (garble)  
Three, verify rate command. (garble). Okay, looks good.  
(garble) 1, 2, and 3.

PAO We are in what is called a keyhole, this communication will improve we are in the peripheral area of Hawaii acquisition circle, which accounts for the bad communication.

SC Thank you for the long hours of support,  
Jack.

CAPCOM Okay, it's been real fine, Walt. Just a final update on the weather in the recovery area, 2000 broken, winds 270 at 20, wave height is 3 feet.

SC Roger.  
CAPCOM 9, 8, 7, 6, 5, 4, 3, 2, 1, mark. T-20 minutes.

SC FDAI scale 55.  
SC 55.  
SC Delta-V charts A and B normal.  
SC A normal, B normal.  
SC Hand controllers armed.  
SC Armed. Number 1 armed.  
SC Okay, standing by for up telemetry command reset. I'll get that at 45 seconds.

SC 60 seconds.  
PAO Mark 1 minute from the deorbit burn, within 2 minutes after that deorbit burn, the spacecraft and the service module should separate. The spacecraft will be in a pitchdown 48 degree attitude at the time of the deorbit burn, about a 300 foot per second burn, some 10 seconds duration.

SC 30 seconds, DMS delta-V in auto.

APOLLO 7 COMMENTARY, 10/22/68, GET: 25933 (CDT 5:39a) 756/2

SC Delta-V in auto.  
SC Flight quad recorder on.  
SC Flight recorder is on.  
SC PIPA's are counting.  
SC 14 ullage in 15 seconds.  
SC Roger.  
SC 15 seconds.  
SC Ullage, and delta-V is counting.  
10, 9, 8, 7, 6, -  
PAO 5, 4, 3, 2, 1, retrofire. Schirra says we are burning right on the mark. And we show that indication here on the ground with 4 good ball values, cutoff and to emphasize the point, Wally added "Very good." Good retroburn. We are reading 259 hours 39 minutes, and already we are 35 seconds counting up from the retrofire point, 35 seconds from it. We will take -  
SC - residuals to 110.  
SC Roger.  
SC Delta-V thrust A and B off. Spacecraft control to SCS.  
SC SCS.  
SC Gimbal loaders are off, circuit breakers near auto control, 4 open.  
SC 4 open.  
SC AC servo power, 1 and 2 off.  
SC 1 and 2 off.  
SC Rotation hand controller number 1 lock.  
SC Controller locked.  
SC EMS mode, stand by. I've logged the residual.  
SC Okay, 199.  
PAO That is Walt Cunningham you hear calling out those checklist items, and primarily Wally Schirra answering, Donn Eisele answering a few of them.  
SC Call program 61.  
SC We've got the loop 39, 29.  
SC Primary glycol to radiator pole, Wally.  
SC My big handle, okay. She's cold, Dave.  
CAPCOM Okay.  
PAO That retroburn took place at an altitude of about 180 miles, 180 miles, and at a point on earth of about 500 miles east of Hawaii.  
SC Okay, adjust my (garble) off.  
PAO We are standing by for some word on separation. Still do not have confirmation on that event.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 25943 (CDT: 5:49a) 757/1

PAO The spacecraft is still about a thousand miles west of the Baja California coast approximately over New Orleans; we'll be at 400 000 feet or 80 miles up, and at that point it will begin the warmer part of its journey. About 3 minutes after New Orleans, it will be over the Florida Coast and will be at an altitude of about 35 miles, and it will be quite warm. We will lose it during this 3 minutes, that will be our black out period.

CAPCOM Roll, pitch and yaw to T and A.

SC (garble)

SC Reading you by 5 Jack; you are reading

hunkey dorey.

CAPCOM Okay, we lost you there for about 2 minutes.

SC Stand by for a post burn update.

CAPCOM Okay.

SC We had a main bus A and main bus B under voltage at set and we got all 3 batteries on but all we can do are really 25.2 volts.

CAPCOM Copy that.

PAO And that confirms separation of that last communication from Cunningham. We don't know the time on it, but it is confirmed the service module and the command module have separated.

SC 25954.

PAO And as we go over the West Coast of the lower California Peninsula we are at about 120 miles altitude, and descending rapidly down what's come to be known as vacuum hill.

SC Go ahead.

CAPCOM 7, we'll have the voice burn pad for you in about 2 minutes.

SC Everything working beautifully Jack.

CAPCOM Roger; looking good. Coming right down the line.

SC There's a slap in the face of the ship rate.

CAPCOM Roger.

PAO And we are 9 - 10 minutes from deorbit burn, we are at a hundred miles altitude; we are now over the Mexican mainland, and proceeding east. The line of flight will bring us across southern Texas, right over Houston, on east to New Orleans, and along the Florida coast. Flight director advises the deorbit maneuver was normal in all respects. This is Apollo Control standing by.

PAO The spacecraft has reported heads down; the pilots are heads down, and they have just started a roll attitude, a roll left maneuver, controlled by the computer, and they will roll up to about 55 degrees and hold that, for whatever a period of time the computer believes is necessary and then they will execute the opposite maneuver

APOLLO 7 COMMENTARY, 10/22/68, GET: 25943 (CDT: 5:49a) 757/2

It's called about a half lift reentry. Max G on the order of  
3. This is Apollo Control, Houston. Standing by.

CAPCOM Apollo 7, Houston.

SC Ready to copy.

CAPCOM Roger. Go with the preburn pad; you are  
that close.

SC Thank you.

CAPCOM How about that.

CAPCOM You are looking real good Wally; coming  
right down the line.

SC This is riding (garble) We are on main  
entries. Really nice control system.

CAPCOM Roger; copy that.

SC Garble

PAO Apollo Control here. We have a very happy  
crew and the navigation of this maneuver is proving exactly  
as preplanned. We are at 60 miles altitude, and very close  
to Houston, almost right overhead, proceeding towards New  
Orleans. It's 14 minutes - we should be directly over New  
Orleans at the 400 000 foot mark, proceeding on east; black-  
out begins 3 minutes - less than 3 minutes from now. And it  
will last just under 3 minutes. The 05G point should be  
acquired at about a minute and half from now.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 25953 (CDT 5:59A) 758/1

PAO The 05 G point should be upon us about a minute and a half from now, 60 miles altitude. I think earlier I had given an indication the blackout would occur between the New Orleans and Florida area, let's move that out between the Florida coast and about half way out, two thirds of the way out to Bermuda, about 700 miles. That will be the sector where we will not have communication. Hopefully we will then as we get on main chute.

SC flying a pink cloud.

SC Cut

PAO Earlier Wally Schirra reported separation was a real slap on the face, and you probably heard him just a second ago saying "We're flying a pink cloud." We are almost to our begin blackout point, about 40 seconds away from it. Flight Director has just adjusted the blackout time to 17 minutes and 30 seconds after the deorbit burn, now there is some question over the seconds. I think we will now stick to 17 02 after the deorbit, which would be right now, and now we do have confirmation they are in the blackout area. The spacecraft is right over the Florida Peninsula.

PAO This is Apollo Control. This is the quiet time here, even the Flight Director, all the voices are subdued. 18 minutes and 17 seconds since deorbit, and about a minute and a half from now we should be out - out of blackout.

PAO This is Apollo Control here now. The crew should beginning - should start beginning to feel the G buildup, and it will peak out, it's a very comfortable 3G's but still that will be the peak load approximately the time that we leave the blackout zone. According to our clocks that's 10 or 15 seconds from now.

PAO This is Apollo Control. Jack Swigert, the CAPCOM, has put out a call, no answer. 20 minutes 25 seconds since deorbit, and there goes the second call. Bermuda reported has acquisition of signal. Bermuda acquisition 259 hours 59 minutes and 55 seconds, most all 59s. And we think we can detect the crackle of the Comm carrier in the ear phones, we have data from Bermuda, we've not voice yet, but we do have data, we have positive acquisition of the spacecraft. We are told the steering errors look real good from the telemetry. The flights dynamics officer and the retro fire officer are confident that we will be very close to target. Retro just said we're looking right at the target point. 22 minutes since deorbit. Flight reports - flight dynamics officers says that during the maneuvers they observed 50 degrees roll in either direction left and right banks, and they estimate drogue chute coming out in about 2 minutes.

APOLLO 7 COMMENTARY, 10/22/68, GET: 25953 (CDT 5:59A) 758/2

PAO                    According to the computer solution here he was - the spacecraft was within 3 miles of target when we lost lock - lost data lock - with the spacecraft only seconds ago from Bermuda. Still no voice contact with the spacecraft. This is not unusual. They probably configured for their recovery voice circuit which we can also monitor. Flight Director reminds us the drogue chutes should come out in about 1 minute, 50, 000 foot point and down to 20 for the main chutes. Mark 24 minutes since deorbit. Still no voice and it is very quiet on the recovery circuit. You can see those choppers though by television. It's absolutely quiet here in the Control Center as everybody simply watches and waits to hear that transmission.

END OF TAPE

PAO We should have main chute deploy. Main chutes due out at 25 minutes. Recovery reports via Kinley Rescue two in aircraft we have an electronic contact. An electronic contact from one of our C-130's operating out of Kinley Air Force Base. And now from the deck of the carrier we get the word from our recovery force that they are monitoring voice from the spacecraft, they're on chutes and all is well. From the Essex, we get a report that the spacecraft is reporting their windows are slightly steamed up, apparently not yet on the water. And now from the Essex, they advise the crew's report being "The wheels are down and locked". Would be a navy - typical Schirra navy approach to landing "the wheels are down and locked" they apparently are preparing to hit that water. Apollo 7 now is in contact with Air Boss, the recovery helicopter over the scene. The carrier says they haven't had a report for a minute or so now but apparently they got very steady reports 2 000 feet altitude, 2 000 feet. And now from the Essex we're told the crew has been reading our calls from here loud and clear. We have not heard from them, however, the Essex has. And Apollo 7 now reporting an altitude of 600 feet, six zero zero feet. Altitude 300 feet, this is the crew reporting to us back via the Essex. The carrier was just queried to see if they have any visual sightings yet and they reported they had not which is confirmed by our television view. And we should be on the water or very very close to SPLASH. We still have received no direct voice contact from here. As we said before, the Essex has been in touch and we would assume they are on the water.

And this is Apollo Control Houston, we have not established an electronic contact by our recovery helicopters as yet, the Sarah beacon is a little search beacon that the spacecraft puts out. They had good voice com between the various recovery units right up to SPLASH and since then we just don't know but the ceiling and the cloud conditions could have some effect on their operation out there today. Certainly the visual sighting.

There is some question as to whether the spacecraft had turned on its rescue beacon, its recovery beacon. The last voice contact was at 300 feet. We got no visual sightings, several electronic sightings coming in. We're just standing by and waiting like everyone else. We have a report from the Essex that Recovery Two and Recovery Three, the helicopters, are reporting intermittent signals, they are trying to plot a bearing right now, they think they have something in sight, they think they're reading something on their scopes. Stand by. Ah, Rescue Two is proceeding on a bearing which they think is the spacecraft. As yet we have

APOLLO 7 COMMENTARY, 10/22/68, GET: 26003 (CDT 6:09a) 759/2

PAO no range estimate. Now from the Essex, we get the report that Recovery Three has lost contact momentarily with their target. Our target point indicator shows 64 degrees by 27, very nearly 27, as the likely SPLASH area. And now, Recovery helicopter three has a new contact and they are proceeding to run it down. And now Air Boss and Recovery Three are tracking bearings, proceeding on the target. We as yet have had no estimate on the range and apparently no voice contact on the water.

Now Recovery Two is proceeding on a bearing of two one zero and our voice circuit out to the Essex is getting a little noisy in the last few minutes, which is making it difficult to hear.

END OF TAPE

PAO From the deck of the Essex they advise very cautiously that they are looking now at a very tentative splash point. This tentative bearing turns out to be a point about 18 miles from the Essex, about 18 miles, and the Essex emphasizes that this is a tentative bearing. The voice - our voice line to the Essex is now restored. We can - it is an intelligible transmission. We lost it there for a few minutes. This is Apollo Control in Houston, when we get more information we will be right back to you.

PAO And this is Apollo Control Houston. Now Recovery 1 has established electronic communication with Apollo 7.

PAO Now we have a report from the Essex that the spacecraft was in what's called stable 1 in NASA talk. That means they were heads down. They were submerged there with their bottom side up towards the air, which probably precluded a lot of transmission, however, they have - apparently inflated their right bags, or their floatation bags. They are now apex up floating and they are establishing electronic contact. Recover 1 has positive contact and now we got the picture. Everybody gets faked out by "recorded picture". Again now the Essex reports that the spacecraft is floating upright and at last reports the spacecraft is about 18 miles north of the aiming track.

Now from the Essex we get a report that recovery Hilo 1 has been in communication with the spacecraft all is well. Our voice circuit out there is getting a little erratic again. Now we are getting a report 17 miles from the Essex. That's 17 miles and apparently north of the aiming point from the Essex. Now Recovery 2 has a Sarah beacon and this would account for the fact that we got no electronic contact during those early minutes on the water. The spacecraft had submerged. This was something that had been anticipated. It was practiced with the crew practiced in a number of engineering tests in the development of the spacecraft. The fact that the spacecraft could submerge apex down, in which case we would have to right it in order to get electronic contact. We may hear a little later here as we move through this recovery operation from somebody who will be called simply Airboss, that's Commander William C. Haskell, of Norwich, New York. He will be in command of the Airboss helicopter.

And Apollo Control here and Recovery 3.  
- Recovery 2 correct that, has a visual sighting now on the spacecraft about 17 miles north of the Essex. Recovery 2

Now Recovery 3 is reporting they are on top of the Command Module. The chopper under the command of Commander Edward A. Scobee, Edward A. Scobee, of Pueblo, Colorado, is reporting that he is right on top of the Command Module.

This is Apollo Control Houston now we are in touch. We are hearing the spacecraft. We hear Wally Schirra talking with the Recovery Helo. Just to give you an idea of how noisy this voice circuit is let's bring it up so we can all hear it. We may have deafened a lot of people, but that's what we're listening to this morning.

Now our Recovery - one of our Recovery Helos is all set to deploy swimmers. Swimmers, swimmers are in the water and we'll assume that they are from Recovery Helo 3, which is the prime Recovery Helo.

Now this is Apollo Control Houston. The swimmers are installing the flotation collar at this time. Now the flotation collar is fully inflated and around the spacecraft.

And Apollo Control Houston here. We've just gotten a report from Airboss. That report was, "there is no visible damage, no visible damage from the trip in space to the Command Module", it is riding nicely now on its flotation collar. Now we have a report ...

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 26029 (CDT 6:35A) 761/1

PAO Now we have a report that one of the crew members may be a little nauseated, a little nauseated. We could not make out which crew member that was. Apollo Control Houston here. The Essex reports they are reading the helicopter and the spacecraft quite clearly now. There is some joshing going on now about Schirra getting his first submarine service, a reference to the inverted spacecraft. I don't think in his long naval career he has had any submarine service, but 16 miles I think we copied. 16 miles and the collar is fully inflated. This is Apollo Control now. Now the Essex is giving us new position, they are 5 miles from the spacecraft, 5 miles and proceeding directly on it. Now we have a report from the Essex. They report the flight crews have tagged up, their physical status is good, they say they are all in good shape. This is Apollo Control Houston here. We are, at last report, 4 miles from the spacecraft. The crew will go aboard the Essex via helicopters. They will be picked up by probably Rescue 3, whose swimmers are now in the water. This is Apollo Control Houston. Our circuit out to the Essex is quite garbled at this point, but we believe he said they are dropping a ladder, one of the recovery helos dropping a ladder to the crew. we'll see if we can't get confirmation on that here. Apollo Control Houston, here. They are reporting from the Essex a light rain shower in the area, and they also got a question the Essex wants to know if we're seeing the television picture back here in Mission Control, and of course we are. We've advised that we'd like to see a spacecraft on that television screen, just like everybody else. They are estimating now 5,000 yards, 5,000 yards on a cloudy day. Apollo 7 has just advised the Essex they are going off the air. They are turning off their radios and securing, and we've been advised the crew is getting ready to open the hatch of their spacecraft. The next step would of course be to enter the helicopter, and the astronauts have already expressed congratulations to the recovery forces before they turned off their on-the-water radio. This is Apollo Control Houston, the hatch is open, and the pilots are moving in to a helicopter. The first astronaut is now getting into a helicopter. This is Apollo Control Houston, and now we are advised the swimmers are arrayed around outside the spacecraft on the collar, but they are just waiting for apparently additional astronauts to emerge. They are also looking in the area for the Apex cover from the spacecraft. The crew reported a little slow getting out of the command module. Now we are getting a report down range that one of the pilots is stepping into the life raft, but we don't know which one yet. Now we're getting the report the second astronaut is getting out of the spacecraft. This is frequently a problem out there because

APOLLO 7 COMMENTARY, 10/22/68, GET: 26029 (CDT 6:35A) 761/2

PAO                    the recovery - the recovery crews don't know the the pilots by a visual sighting, so they can only report first astronaut, second astronaut. An astronaut is on his way up into the helicopter, is being hoisted by a net. Now we have a pilot about to enter the door to the helicopter and the last, a third and last astronaut, probably Wally Schirra, is leaving the command module now. And now we have a report that a second astronaut is in the helicopter, second astronaut is in the helicopter. Now Wally Schirra is reported out of the command module. It's not clear to us whether he's in the raft or on the ladder. The second astronaut is reported fully aboard the recovery helicopter. That would leave only Wally, who at last report was on the raft and waving vigorously.

END OF TAPE

APOLLO 7 COMMENTARY, 10/22/68, GET: 26049 (CDT 6:59a) 762/1

PAO Now we are getting a report that all three astronauts are aboard the helicopter and if that is the case, they should be proceeding directly to the Essex.

PAO This is Apollo Control Houston. We have a report from the scene that the hatch is now being closed by the swimmers. The spacecraft has been secured, all three pilots are in the helicopter. From the AIRBOSS hovering over the scene just advised that the helicopter is about 3 miles from the carrier and is proceeding now towards the Essex, recovery 3, with the three astronauts proceeding now toward the Essex at 2-1/2 miles out.

PAO This is Apollo Control Houston. We now have a report from the helicopter that it should be on deck in about 3 minutes, estimating 3 minutes to the deck of the carrier. They are deviating to avoid some shower activity out in the area. Looks like we have got it in sight now. We clocked the pickup at something on the order of 50 minutes after splash - the pilots were in the helicopter.

END OF TAPE

PRESIDENT            Captain Walter Schirra, Commander Donn Eisele, and Major Walter Cunningham, this is the President. We here in the Capitol, and all over this country and world are so very proud of you this morning. The skies there have been opened upon you showing the hopes of the world lifted to you, and in this universal gladness there is the making of a human partnership. Where space technology and science will serve as instruments of man's peace in the world. And that's really enough for the United States, to excel in space. And today despite our trials we have only our fingertips on the latch to unlock a world of miracles both practical and profound. So the blessings we already hold in our hands, we know that neither complacency nor conceit can stay our hands from reaching higher. So, your fellow countrymen are happy to welcome all of you home with that encouragement. We salute the three of you, as well as the thousands of your space team led by Mr. Webb and others, have great admiration and affection and when you have finished your debriefings, Mrs. Johnson and I hope to receive you where we can talk about your experiences without having to go through a Houston switchboard. Thank you very much.

SCHIRRA            Thank you very much, Mr. President and over to Donn Eisele.

EISELE            Thank you very much, Mr. President.

CUNNINGHAM        Thank you very much, Mr. President  
it was our pleasure and honor to make the trip.

END OF TAPE